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## Book of Proceedings

Editors:

Marco Andre da Silva Costa, Abdelhamid Nedzhad, Danijela Lucic



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68<sup>th</sup> International Scientific Conference on Economic and Social Development Development

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# THE EFFECT OF CORPORATE INCOME TAXATION ON COMPANIES FINANCIAL PERFORMANCE - LISTED COMPANIES ON EUROZONE STOCK MARKETS

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## ABSTRACT

*The performance evaluation of a company might be based on financial and non-financial factors. However, on top of the main key performance indicators is always profitability. The return on assets and the return on equity are the most used ratios/indicators used to determine financial performance. Therefore, taxation is always a factor that influences the profitability of any business. The tax burden, measured by the tax effect or by the effective tax rate, is an important factor determining the financial performance of companies listed on stock markets. The higher the tax burden (i.e., the lower the tax effect or, the higher the effective tax rate), the lower the profitability and, consequently, the financial performance. Therefore, the differences in the tax law might have an impact on profits taxation. This study aims to analyse the effect of corporate income taxation (tax effect) on return on equity (ROE) of listed companies of eurozone stock markets. The data was collected from listed companies' financial statements in the Eurozone during 2018 (Orbis database). The final sample is based on 750 listed companies from several activity sectors and located in different Eurozone countries. The research results were obtained using the Ordinary Least Square (OLS) regression method. The return on equity average is approximately 12,7%. The tax effect average is approximately 71,4% (i.e., 28,6% in terms of effective tax rate). Therefore, the influence of the tax effect is significant. The results suggest that for the companies listed in the Eurozone stock market, a variation of 1% in the fiscal effect generates a 1,243% variation in the same direction of the ROE. The relationship is positive, as was expected.*

**Keywords:** *DuPont model, regression analysis, ratio analysis, return on equity, tax effect*

## 1. INTRODUCTION

The performance evaluation of a company might be based on financial and non-financial information. The financial analysis adopts financial data to assess a company's performance and make projections of how the company will perform in the future. It allows recognising changes in financial trends, knowing the performance of a company and understanding its evolution. Profitability is the key when performing financial statement analysis. Profitability is the company's ability to generate profit within a certain period and show how attractive the economics of the business are.



In practice, financial performance and profitability are measures of the results of a company's policies and operations in monetary terms (Sultan, 2014). The return on equity (ROE) and the return on assets (ROA) are the most used indicators/ratios to determine financial performance. Both ratios are based on net income. Therefore, taxation is always a factor that influences the profitability of any business. The tax burden, measured by the effective tax rate (ETR) or by the tax effect (inverse of ETR), is an important factor that determines the financial performance of companies listed on stock markets. The higher the tax burden measured by the ETR, the lower the profitability and, consequently, the financial performance; the higher the tax burden measured by the tax effect (i.e., lower values), the lower the profitability and, thus, the financial performance. This study aims to analyse the tax effect of corporate income taxation on listed companies of eurozone stock markets. For this purpose, we use the DuPont model as a starting point to identify the main factors that have an influence on profitability (return on equity). One of the main factors is the tax burden, measured by the tax effect. Thus, in this study, we analyse the impact of the tax effect on ROE. The data was collected from listed companies' financial statements in the Eurozone during 2018 (Orbis database), and the final sample is based on 750 listed companies from several activity sectors and located in different eurozone countries. The research results were obtained using the Ordinary Least Square (OLS) regression method. The paper is organised as follows: after this introduction, in point two, we present a brief and relevant literature review; in point 3, we describe the research method, explain the data and sample selection, and describe the empirical study; point four, is dedicated to the results discussion; Finally, the main conclusions and the implications of our findings are presented.

## **2. LITERATURE REVIEW**

A company's performance evaluation is an inseparable part of the management role, essential to define the impact of management decisions, the direction of the activity results and the decisions that must be taken to improve the results (Narkunienė & Ulbinaitė, 2018). This evaluation consists of measuring what had been achieved by a company in a certain period to obtain useful information related to flow of fund, the use of fund, effectiveness and efficiency, and it helps the managers make the best decisions. Performance evaluation has been mainly conducted based on financial information by analysing indicators of profitability, liquidity, solvency, and other financial ratios/indicators.

### **2.1. Profitability and return on equity**

Profitability is one of the main objectives of all companies, to allow its survival and growth in the current competitive market economy and indicates whether the company has good prospects in the future; thus, each company intends to improve profitability. Several studies analyse the profitability of companies in different countries and industries using financial indicators such as return on total assets (ROA), financial return and invested capital (ROIC), where the elements considered express working capital. Still, other studies evaluate the performance considering profit before interests and taxes (EBIT), economic value added (EVA), return on equity (ROE) and operating profit margin (Popa & Ciobanu, 2014). The relationship between profitability and internal and external factors was also very studied (Xianyu, 2011; Chaddad & Mondelli, 2013), but, in some cases, the results were inconclusive (Al-Jafari & Samman, 2015). In this way, Popa and Ciobanu (2014) quantified the performance of the Romanian SMEs companies using ROE and ROIC. They adopted the OLS model to analyse whether some factors can influence the profitability and the results were significant for most of them. Hence, ROE is one of the major indicators adopted in the financial analysis of the companies that measure the ability of shareholders' equity to generate a financial return. It is calculated by dividing net income by shareholders' equity and analysing the profitability on the equity investor's perspective on its net profits (net profit after tax and interest expenses) relatively to

the book value of equity investments. It is relevant for investors, knowing about the creation of additional value (Eiteman, Stonehill, & Moffet, 2002) and for entrepreneurs and managers, helping them in the decision-making process (Burja, 2011; Chandrapala & Guneratne, 2012; Chandrapala & Knapkova, 2013; Charles et al., 2018). Investors and entrepreneurs can assess if their investment is profitable or not, analysing the global efficiency rate (Popa & Ciobanu, 2014).

## **2.2. Tax burden and profitability**

One important factor that influences the profitability of any business is taxation, particularly income taxation. Clausing (2007) studied variation among OECD countries in the size of corporate income tax revenues relative to GDP over 1979-2002 and observed a parabolic relationship between tax rates and revenues, implying a revenue-maximising corporate income tax rate of 33% for the whole sample. The author also concluded that this revenue-maximising rate decrease as economies are smaller and more integrated with the world economy. In another cross-country study, Devereux, Lockwood and Redoano (2008) analysed 21 OECD countries between 1982 and 1999 and found evidence that countries compete over the statutory tax rate to attract mobile profit. Overesch (2005) studied the effective tax burden of companies in EU member states in 2005 and observed remarkable differences between countries. He concludes that, from the point of view of each country, cutting the statutory profit tax rate seems to be a favourable strategy because it improves the position in the international tax competition on both real investments and mobile taxable profits. Alyeksyeyev et al. (2018) analysed the income tax rates in different countries and concluded that companies' taxation negatively affects the companies; the most effective optimisation of the tax burden can only be achieved with comprehensive carrying out on the local and macro-economic measures of influence. Also, at the macroeconomic level, other studies observed a negative relation between the level of companies' taxation and the economic activity (Koester & Kormendi, 1989) and the GDP growth (Plosser, 1992). Baker (2018) studied the influence of the corporate tax rate in the less developed countries, using data of 14 countries over the period between 1980 and 2006. The analysis showed that although the corporate tax rate has decreased, corporate tax revenues have been increasing. The corporate tax rate is increasing in the personal tax rate. Constantin (2012) studied the influence of financial indicators, such as the assets' structure, the degree of indebtedness, the company size and the rates of return on the ETR, using data of 90 Romania companies for the year 2012. He concluded that financial profitability indirectly influences the effective income tax rate and negatively links the ETR and leverage. An interesting approach to income tax is the influence on financial performance. Ngobo and Stefani (2001) validated that financial performance is correlated to the activity sector, diversity and heterogeneity of economic entities using a model that includes ROA, ROI, and q Tobin indicators. Stefanescu et al. (2018) analysed the possible influence of income tax over a company's performance in a sample of 20 companies listed on the Bucharest Stock Exchange for the period 2013-2015. They demonstrated that ETR influences a company's financial performance negatively. They found the ETR negatively affects both dependent variables (ROE and net profit's margin rate). An increase of tax rate by 1% determines a decrease of ROE in 0.3135 percentage points, and when the effective tax rate increases by 1%, the net profit's margin rate decreases by 0.2868 percentage points. In the sector service, Fang et al. (2019) investigated the impact of the tax burden and regulations on the development of this sector and concluded a significant and negative effect. However, the effect varies by economic development level, economic cycle, and industry categories. Xianyu (2011) adopted a multiple regression model with a sample data from 2000 to 2009 of listed companies in China. He found that the tax burden on the macro and micro-operating performance significantly negatively impacted these companies. Different studies analysed the effect of corporate income tax on financial performance and the results

differ according to the country and the industry. A negative relationship between corporate income tax and financial performance/profitability was revealed in Ghana (Gatsi et al., 2013), Tunisia (Assidi et al., 2016) and Romania (Pitulice et al., 2016). In listed consumer goods companies in Nigeria, from 2006-2016, Junaidu and Hauwa (2018) found an insignificant negative relationship between corporate tax and financial performance using the ROA as a measure. Otswani et al. (2017) studied listed companies in Kenya and obtained different results. They found a positive relationship between corporate income tax and the financial performance of these companies. Vržina and Dimitrijević (2020) studied a particular sector – the agricultural companies in Vojvodina – and their results revealed that nearly 69% of observations have a current effective tax rate and cash effective tax rate of 0%. These results indicate that agriculture is an industry with an exceptionally low corporate income tax burden. Abiahu et al. (2020) examined the effect of corporate tax on the sustainable financial performance of 10 manufacturing listed companies in Nigeria in 2013-2017. The results revealed that corporate tax payment has no significant effect on the ROE. Still, it has a positive and significant effect on the debt-to-equity ratio.

### 2.3. The DuPont Model

The DuPont model was created in the early 1900s, but it is still a model valid for assessing profitability (Sheela & Karthikeyan, 2012). The model was first introduced by F. Donaldson Brown in the General Motors Corp. when he was given the task of cleaning up the finances in this giant company. The DuPont model is credited to Brown as he attempted to find a mathematical relationship between two commonly computed ratios, namely net profit margin and total asset turnover. The original DuPont model was firstly used in the internal efficiency report, which was the product of two often-computed ratios, net profit margin (a measure of profitability) and total asset turnover (a measure of efficiency). With ROA being affected by a profitability measure and an efficiency measure, the DuPont model became a widely used tool of financial analysis (Liesz, 2002). The formula of the original DuPont model is illustrated below in equation 1 (Liesz, 2002; Soares and Galdi, 2011; Mubin et al., 2014).

$$ROA = \frac{\text{net income}}{\text{sales}} \times \frac{\text{sales}}{\text{asset turnover}} = \frac{\text{net income}}{\text{asset turnover}} \quad [1]$$

Later, in the 1970s, emphasis on financial analysis shifted from ROA to ROE, and the DuPont model was modified to include the ratio of total assets to equity (Little et al., 2011). To obtain deep information about the factors that have an influence on ROE, the DuPont model states that ROE depends on three factors: "net profit margin", "assets turnover", and "leverage" (Ferreira et al., 2019). A new modification was introduced by Hawawini and Viallet (1999) to add two more factors, consisting of a total of five ratios combined to form the ROE. The equation suggested by the previous authors has been stated as follows (equation 2):

$$ROE = \frac{\text{net income}}{EBT} \times \frac{EBT}{EBIT} \times \frac{EBIT}{\text{revenue}} \times \frac{\text{revenue}}{\text{total assets}} \times \frac{\text{total assets}}{\text{shareholder's equity}} \quad [2]$$

In this formula, EBIT is the earnings before interest and taxes, EBT is the earnings before taxes, and the ROE is equal to (*tax burden*  $\times$  *interest burden*  $\times$  *EBIT*  $\times$  *EBT margin*  $\times$  *total assets turnover*  $\times$  *leverage*). The tax burden (perspective of tax effect) measures the effect of taxes on ROE, the interest burden measures the interest burden on ROE, the EBIT margin measures the operating profitability on ROE, the assets turnover measures how effectively the entity uses the assets to generate revenue, and the financial leverage measures the relationship between the equity and total assets (Ferreira et al., 2019).

During this long period, three distinct versions of the DuPont model were created and used to help discover the underlying drivers of profitability and return over time (Little et al., 2011). The last modified version of this model is more complete. It includes the following five factors: tax burden effect, interest burden effect, earnings before interest and taxes (EBIT) margin, assets turnover and financial leverage.

### 3. METHODOLOGY

The main goal of this research work is to analyse the relationship between the tax effect and the Return on Equity (ROE) of companies located in Eurozone countries. As previously mentioned, ROE is one of the most important ratios/indicators used to determine financial performance. According to the DuPont model, the tax burden, measured by the tax effect or the effective tax rate, influences ROE. Thus, this variable is an important factor determining the financial performance of companies listed on the stock market. For achieving such a goal, financial information from the ORBIS/AMADEUS database was used to conduct the research. The data collected is based on the financial statements of listed companies in the Eurozone in the economic period of 2018. During the data processing arose the need to remove some observations contained in the initial database. Namely, those concerning: (i) companies whose net profit for the period was shown to be higher than the profit before tax, a situation that possibly reflects the accounting treatment of deferred taxes established in financial accounting standards; (ii) companies with "tax effect" and "financial charges" ratios higher than one, for the reason previously mentioned, where there is a significant positive effect on results before tax; (iii) companies whose variables are not defined or do not present a value. For obtaining viable and coherent analysis results, it is worth mentioning that the database does not present unrelated data, data falling into the criteria abovementioned, or non-existent data. In these cases, observations were eliminated so that there would be no bias in the results. After data processing, a final sample consisting of 750 companies was obtained. Regarding their absolute and relative distribution by country, the following should be highlighted. France (22.8%), Germany (21.6%) and Italy (15.9%) are the economies where most companies in the sample are located (60.3% of all companies in the sample). For each remaining Eurozone country, the number of companies considered in the sample ranges from 5.9% in Spain, Belgium, or the Netherlands and 0.5% in Latvia or Slovakia. In Portugal are located 2.7% of the total sample companies. In the sense of the proposed analysis, to study the relationship between the Return on Equity and the tax effect will be applied the linear regression methodology, known as the Ordinary Least Squares (OLS) method. The method is intuitively applicable and mathematically simple. Its name comes from its purpose. With the use of the OLS method, the objective is to adjust a set of estimated values to the real values of the variable under study, minimising the sum of squares of the residuals (differences between estimated and actual values). The estimation is performed through a linear regression to identify and quantify which variables explain (the explanatory or independent variables) another variable, which is the object of study (dependent or explained variable) (Gujarati, 2003). In the specific case of this study, by applying the OLS method, the aim is to understand if the tax effect influences the Return on Equity and, if it influences, quantify the influence of changes on the tax burden on the Return to Equity. The model to estimate is given by the following equation (equation 3):

$$ROE_i = \alpha + \beta_i Tax Effect_i + \varepsilon \quad [3]$$

Where ROE is the dependent variable, Tax Effect is the explanatory variable,  $\alpha$  is the model constant,  $\beta_i$  is the estimated coefficient and  $\varepsilon$  the error term. Note,  $i = 1, 2, \dots, n$  represent the observations in the model since the database is cross-sectional. An additional mathematical transformation is done.

The variables will be present in a logarithmic form. The conversion allows the estimated coefficient to be read as a percentage. On the other hand, it will enable the range of values used in the regression to be reduced. The accuracy of the model fit may be evaluated using a set of indicators and tests. The coefficient of determination ( $R^2$ ) indicates the percentage in which the variations in the explained variable are explained by variations occurring in the explanatory variable. A larger value indicates a better accuracy of fit, i.e., a better model. The Student's t-test allows verifying that the estimated coefficient is statistically significant and should be considered as correctly predicting changes in the explained variable. It should be noted that the OLS method is one of the traditional methods of inferential analysis most used in economic research (Wooldridge, 2012). In the specific case of applying the DuPont model, several articles have been published in recent years that use this method, which validates and justifies its use in this study (Warrad & Nassar, 2017; Gaweda & Sajnóg, 2020).

#### 4. RESULTS AND DISCUSSION

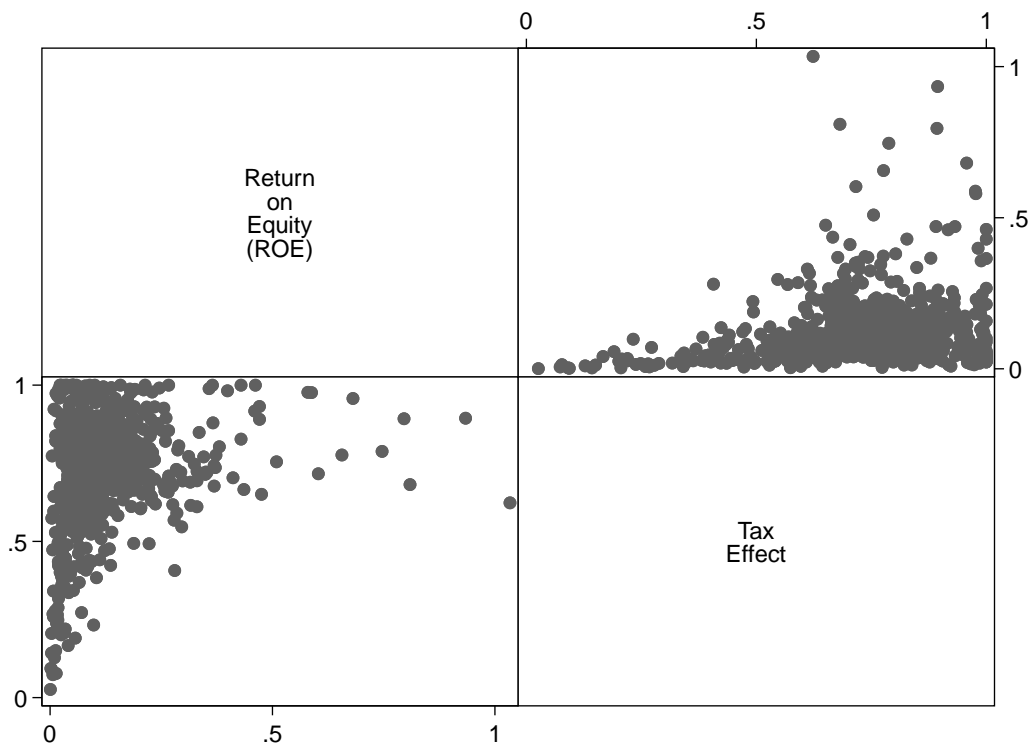
For preparing the inferential analysis and make the data under study known, a descriptive analysis of the data and Pearson's linear correlation analysis are first performed. The statistical distribution of data is presented in Table 1. The distribution presents the main indicators of centrality (mean) and variability of the distribution (standard deviation and the minimum and maximum distribution values). In addition, the number of observations for each variable and the respective unit of measurement is presented. It should be noted that, for a more simplified analysis of the data obtained, the values of the return on equity and the tax effect ratios are multiplied by 100 to show values in percentage.

*Table 1: Statistical distribution*

	Nº	Unit of measurement	Mínimum (%)	Maximum (%)	Mean (%)	Standard Deviation (%)
<b>Return on Equity</b>	750	Rácio	0.1	103.4	12.7	11.3
<b>Tax Effect</b>	750	Rácio	2.6	100.0	71.4	17.1

*(Source: Author's elaboration)*

On the Eurozone listed companies, the Return on Equity varies between 0.1% and 103.4%, with an average value of 12.7%. The Return on Equity indicates the percentage of profit for each euro invested, so for each euro invested, the companies under study receive an average profit of 12.70% (i.e., 0,127€). The standard deviation is 11.30%, which shows the values are widely dispersed from the average value. The tax effect variable varies between a minimum value of 2.6% and a maximum value of 100%. The tax effect variable is calculated by the difference between 1 and the effective tax return, i.e., tax effect = 1 – effective tax rate (tax/profit before tax). Therefore, the relationship between the variables is inverse since the higher the tax effect value, the lower the tax burden, and vice versa. Companies with a zero value of tax effect present the maximum tax burden of this variable (income before tax = income tax). A minimum value of 2.6% tax effect indicates the existence of firms for which the effective tax rate effect reaches approximately 97.4%. The average value of the variable, 71.4%, indicates that the average effective tax rate for the sample is 28.6%. The standard deviation has a value of 17.3%, which reveals a perception that each company deviates, on average, either positively or negatively, from the average value by 17.3%. The distribution of the ROE (above) and the tax effect (below), ranging from 0 to 1, for each one of the 750 companies listed in the Eurozone stock market can also be observed in Figure 1.

*Figure 1: Distribution of the observation by variable on a 0 to 1 scale.**(Source: Author's elaboration)*

In the following table (Table 2), in addition to the values obtained in Pearson's correlation between the pair of variables, considering both the original values and the logarithmic values, the level of statistical significance of the correlation is presented.

*Table 2: Pearson correlation between variables*

	Original values		Logarithmic values	
	Return on Equity	Tax effect	Return on Equity	Tax effect
Return on Equity	1	1	1	0,487**
Tax Effect	0,245***	0,245***	0,487**	1

*Note: \*\*\* indicates statistical significance at 1% level of significance, \*\* indicates statistical significance at 5% level of significance.*

*(Source: Author's elaboration)*

From the observation of the correlation matrix presented above, it is possible to conclude the ROE shows a statistically positive relationship with the tax effect (the higher the tax effect value, the greater the return on equity). The relationship is a moderate one (Mâroco, 2011) and smaller for the original values than for the logarithmic values. After performing the descriptive and correlation analysis of the study sample, it was found that the values are not evenly distributed. It can be deduced that the observations are heterogeneous. Considering the pattern of the variables under study, the OLS is sensible to heterogeneity, and the estimated results of the OLS method may be subject to biases. In order to minimise and limit this problem, the logarithms corresponding to each of the variables analysed were calculated. The logarithm of the data of the study variables has several advantages such as: (i) a greater homogeneity of the values; (ii) a greater levelling of the value of the observations, so that variations are not reflected; and (iii) an analysis of results in terms of growth. From the literature review and the descriptive analysis above made, it is expected a positive influence on the tax effect on the Return on Equity.

The OLS method will allow calculating the importance of the influence. Table 3 presents the OLS estimation results – it is possible to observe the estimated coefficients, standard deviation, and individual statistical significance. Moreover, is presented the coefficient of determination.

*Table 3: OLS estimation results*

Variables	Estimation Results		
	Estimated coefficient	Standard deviation	Statistical significance
Constant	-1,915	0.042	***
Tax effect	1.243	0.815	***
Observations (number)	750		
R2	0,237		

*Note: \*\*\* indicates statistical significance at 1% level of significance  
(Source: Author's elaboration)*

From the observation of the above table, the tax effect is not alone a very powerful explanatory variable for the ROE. Indeed, the changes in the Return on Equity depend on a more significant number of explanatory variables. However, the coefficient of determination indicates the changes in the tax effect explain almost 24% of the changes observed in the companies' ROE. The results suggest that for the companies listed in the Eurozone stock market, a variation of 1% in the fiscal effect generates a 1.243% variation in the same direction of the ROE. The relationship is positive, as was expected. The results are in line with other studies previously mentioned. Regarding the negative impact of taxation in ROE that significantly influence profitability, see, for example, Alyeksyeyev et al. (2018), Stefanescu et al. (2018). A similar trend (negative relationship between corporate income tax and financial performance/profitability) was found by Gatsi et al. (2013) in Ghana or by Assidi et al. (2016) in Tunisia and Pitulice et al. (2016) in Romania. Nonetheless, we need to consider if the tax variable used is the tax effect or effective tax rate when comparing the results.

## 5. CONCLUSION

Several factors might have an influence on the financial performance of a company. The main goal of this study is to analyse the tax burden of corporate income taxation on listed companies of Eurozone stock markets. For this purpose, we use the DuPont model as a starting point to identify the main factors that have an influence on profitability (return on equity). One of the main factors is the tax burden, measured by the tax effect in the DuPont model. The others are the interest burden, the EBIT margin, the total assets turnover, and the leverage. Considering the sample based on 750 companies listed in the Eurozone stock markets (the data was collected from the financial statements for 2018 and was available on the ORBIS Database) was found the following evidence:

- 1) on average, the return on equity for the global sample was 12.4%;
- 2) on average, the tax effect for the global sample was 71.4% - in other words, the average of the effective tax rate was 28.6%;
- 3) the results suggest that for the companies listed in the Eurozone stock market, a variation of 1% in the fiscal effect generates a 1.243% variation in the same direction of the ROE. The relationship is positive, as was expected.

Therefore, the tax effect plays an important role to explain the return on equity and the performance of financial listed companies in the Eurozone stock market. Consequently, the tax effect factor is a relevant variable that influences Eurozone companies' competitiveness and an essential element to be considered for decision-making concerning tax planning and foreign investments. Future research based on a country-by-country analysis will also be relevant to determine the differences in the tax effect behaviour inside the Eurozone countries.

**LITERATURE:**

1. Abiahu, M.F., Nwaorgu, I., & Oyekezie, K. (2020). Effect of Corporate Tax on Sustainable Financial Performance of Listed Firms in Nigeria. *Journal of Taxation and Economic Development*, 19(1), 50-63.
2. Al-Jafari, M., & Samman, H. (2015). Determinants of profitability: evidence from industrial companies listed on Muscat securities market. *Review of European Studies*, 7(11), 303-311.
3. Alyeksyeyev, I., Paranchuk, S., & Chervinska, O. (2018). Controlling the tax burden of the enterprise in the reality of Ukrainian legislation. *Financial Sciences/Nauki O Finansach*, 23(1), 22-32. doi:10.15611/fins.2018.1.02
4. Assidi, S., Aliani, K., & Omri, M. (2016). Tax optimisation and the firm's value: Evidence from the Tunisian Context. *Borsa Istanbul Review*, 16(3), 177-184.
5. Baker, P. (2018). An analysis of the corporate income tax policy of less developed countries. *The Scandinavian Journal of Economics*, 120(2), 400-427. doi:10.1111/sjoe.12237
6. Burja, C. (2011). Factors influencing the companies' profitability. *Annales Universitatis Apulensis Series Oeconomica*, 13(2), 215-224.
7. Chaddad, F., & Mondelli, M. (2013). Sources of firm performance differences in the US food economy. *Journal of Agricultural Economics*, 64(2), 382-404.
8. Chandrapala, P., & Guneratne, W. (2012). Ownership concentration and financial performance: the case of Sri Lankan listed companies. *Corporate Ownership & Control*, 9(4), 170-177.
9. Chandrapala, P., & Knapkova, A. (2013). Firm-specific factors and financial performance of firms in the Czech Republic. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 61(7), 2183- 2190. doi: 10.11118/actaun201361072183
10. Charles, C., Ahmed, M., & Joshua, O. (2018). Effect of firm characteristics on profitability of listed consumer goods companies on Nigeria. *Journal of Accounting, Finance and Auditing Studies*, 4(2), 14- 31.
11. Clausing, K. (2007). Corporate tax revenues in OECD countries. *International Tax Public Finance*, 14(2), 115-133. doi:10.1007/s10797-006-7983-2
12. Constantin, A. (2012). The analysis of correlation between profit tax and corporate financial performance. Working paper. Available at : [http://www.dafi.ase.ro/revista/8/Constantin %20Andreea%20Adelina%20%20- %20The%20Analysis%20of%20Correlation%20%20between%20Profit%20Tax%20and%20Corporate %20Financial%20Performance%20-%20Article.pdf](http://www.dafi.ase.ro/revista/8/Constantin%20Andreea%20Adelina%20%20-%20The%20Analysis%20of%20Correlation%20%20between%20Profit%20Tax%20and%20Corporate%20Financial%20Performance%20-%20Article.pdf)
13. Devereux, M., Lockwood, B., & Redoano, M. (2008). Do countries compete over corporate tax rates?. *Journal of Public Economics*, 92(5-6), 1210-1235. doi:10.1016/j.jpubeco.2007.09.005
14. Eiteman, D.K., Stonehill, A.I., & Moffett, M.H. (2002). *Administração Financeira Internacional* (9<sup>th</sup> ed.). São Paulo: Bookman.
15. Fang, H., Yu, L., Hong, Y., & Zhang, J. (2019). Tax Burden, Regulations and Development of Service Sector in China. *Emerging Markets Finance and Trade*, 55(3), 477-495. doi: 10.1080/1540496X.2018.1469001
16. Ferreira, L., Lopes, J., & Nunes, A. (2019). The Relevance of the Tax Effect Compared with Other Dupont Model Factors in Order to Explain the "Return on Equity" (Listed Companies – France, Germany, Portugal and Spain). In Soliman, K. (Ed.), *Proceedings of the 34<sup>th</sup> International Business Information Management Association Conference*, 8498-8507. Madrid: IBIMA.
17. Gatsi, J., Gadzo, S. & Kportorgbi, H. (2013). The effect of corporate income tax on financial performance of listed manufacturing firms in Ghana. *Research Journal of Finance and Accounting*, 14(4), 118-124.



18. Gaweda, A., & Sajnog, A. (2020). Cross-Sectorial detection of the return on equity determinants based on the 7-factor DuPont model. *Studia Prawno-Ekonomiczne*, T.CXIV. doi.org/10.26485/SPE/2020/114/12
19. Gujarati, D. (2003). *Basic Econometrics* (4<sup>th</sup> ed.). New York: McGraw-Hill.
20. Hawawini, G. A., & Viallet, C. (1999). *Finance for executives: Managing for value creation*. Cincinnati: South Western College Pub.
21. Junaidu, M. & Hawau, S. (2018). Corporate tax and financial performance of listed Nigerian consumer goods. *Journal of Accounting and Financial Management*, 4(4), 30-43.
22. Koester, R. B. & Kormendi, R. C. (1989). Taxation, Aggregate Activity And Economic Growth: Cross-Country Evidence On Some Supply-Side Hypotheses. *Economic Inquiry*, 27(3), 367-386.
23. Liesz, T. (2002). Really modified DuPont analysis: five ways to improve return on equity. Working Paper, Mesa State College. Retrieved 30.04.2021 from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.610.5026&rep=rep1&type=pdf>.
24. Little, P. L., Mortimer, J. W., Keene, M. A., & Henderson, L. R. (2011). Evaluating the Effect of Recession on Retail Firms' Strategy using DuPont Method: 2006-2009. *Journal of Finance and Accountancy*, 7, 1-7.
25. Marôco, J., (2011). *Análise estatística com o SPSS Statistics* (5th ed.). Pero Pinheiro: ReportNumber.
26. Mubin, M., Iqbal, A., & Hussain, A. (2014). Determinant of return on assets and return on equity and its industry wise effects: evidence from KSE (Karachi Stock Exchange). *Research Journal of Finance and Accounting*, 5(15), 148-157.
27. Narkunienė, J., & Ulbinaitė, A. (2018). Comparative analysis of company performance evaluation methods. *Entrepreneurship and Sustainability Issues*, 6(1), 125-138.
28. Ngobo, P.V., & Stefani, E. (2001). Les différences de performance financière entre les entreprises: résultats du marché français. *Finance Contrôle Stratégie*, 4(1), 89-121.
29. Otواني, M., Simiyu, G., & Makokha, E. (2017). Effect of corporate income tax on financial performance of companies listed on the Nairobi securities exchange in Kenya. *International Journal of Social Science and Information Technology*, 3(8), 2467-2477.
30. Overesch, M. (2005). *The Effective Tax Burden of Companies in Europe* (CESifo DICE Report, 3(4), 56-63). München: Ifo Institut für Wirtschaftsforschung an der Universität München. Retrieved 30.04.2021 from <http://hdl.handle.net/10419/166863>.
31. Pitulice, I., Stefanescu, A., Minzu, V., Popa, A., & Niculescu, A. (2016). Research of corporate tax impact on financial performance. Case of companies listed on Bucharest Stock Exchange. *Management and Economics Review*, 1(2), 203- 216.
32. Plosser, C. (1992). The search for growth. *Proceedings – Economic Policy Symposium Jackson Hole*, 57-86. Federal Reserve Bank of Kansas City.
33. Popa, A., & Ciobanu, R. (2014). The Financial Factors that Influence the Profitability of SMEs. *International Journal of Academic Research in Economics and Management Sciences*, 3(4), 177-185.
34. Sheela, S. C., & Karthikeyan, K. (2012). Financial Performance of Pharmaceutical Industry in India using DuPont Analysis. *European Journal of Business and Management*, 4(14), 2222-2839 (Online).
35. Soares, E., & Galdi, F. (2011). Relação dos modelos DuPont com o retorno das ações no mercado brasileiro. *Revista Contabilidade & Finanças*, 22(57), 279-298. doi:10.1590/S1519-70772011000300004
36. Stefanescu, A., Pitulice, I. & Mînză, V. (2018). The impact of income tax over financial performance of companies listed on the Bucharest Stock Exchange. *Journal of Accounting and Management Information Systems*, 17, 626-640.

37. Sultan, A. (2014). Financial Statements Analysis - Measurement of Performance and Profitability: Applied Study of Baghdad Soft-Drink Industry. *Research Journal of Finance and Accounting*, 5(4), ISSN 2222-1697(Paper), ISSN 2222-2847 (Online).
38. Vržina, S. & Dimitrijeviæ, M. (2020). Determinants of profitability of the agricultural sector of Vojvodina: The role of corporate income tax. *European Journal of Applied Economics*, 17(1), 1-19.
39. Warrad, L. H., & Nassar, M. (2017). Could profitability, activity and use of Equity Finance Increasing DuPont Model of Return on Equity? Jordanian Case. *International Review of Management and Marketing*, 7(3), 35-41.
40. Wooldridge, J. (2012). *Econometric Analysis of Cross Section and Panel Data*. London, MIT Press.
41. Xianyu, X. (2011). The impact of tax on listed companies in China A-share market. In *2011 International Conference on Business Management and Electronic Information*, 515-519. Guangzhou: IEEE. doi: 10.1109/ICBMEI.2011.5920507

# **A REVIEW OF TIME DRIVEN ACTIVITY BASED COST IN SERVICES AND FREIGHT FORWARDING BUSINESS**

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## **ABSTRACT**

*This paper aims to characterize and identify trends in scientific research, published in the last five years, about the application of Time Driven Activity Based Cost to services and freight forwarding business. The authors employed content analysis to perform a systematic literature review on a sample of nineteen articles, complemented by a contingency analysis. Surprisingly, none of the papers were published in any accounting journal. Furthermore, it was found that the dominant research field is health care costing. Regarding to the freight forwarding business, it was not found any material evidence specifically related to the application of Time Driven Activity Based Cost. Such evidence suggests that further research TDABC could possibly be tested and applied to the freight forwarding business.*

**Keywords:** *Systematic Literature Review (SLR), Time Driven Activity Based Costing (TDABC), Services, Freight Forwarding Business, Health Care*

## **1. INTRODUCTION**

Nowadays in the freight forwarding environment exists a massive need of accurate costs. In the relation among customers and suppliers, deep cost knowledge is the basis for the decision-making process. It is not a simple task to control and manage the costs and, is very complex to find the costing method that can fulfil the needs and complete the hard equation *cost vs benefits* (Teece, 2010). The global profitability of a firm depends not only upon whether the sales prices can regain product costs, but also whether this gross margin is enough to cover the cost-of-serving the customer (Everaert et al., 2008; Shapiro et al., 1987). The cost of serving the customer includes order-related costs, plus specific logistic, selling, and administrative expenses. Understanding the cost-to-serve, companies can safeguard profitability, even in a very competitive environment (Foster et al., 1996). However, this requires that the cost model used is accurate and detailed enough to capture the many factors that influence the cost of serving the customer (Everaert et al., 2008). Therefore, managers must know the unit cost of products and the cost of customer service levels to use them during negotiations with other members of the supply chain. Only by having detailed and accurate cost information can suppliers succeed in realizing fair exchanges and profitable partnerships (Lin et al., 2017; Norek & Pohlen, 2001; Themido et al., 2000).

According to Hoozée et al., (2009) both calculating and monitoring cost behaviour must be a constant task to maintain competitiveness, guarantee profitability, long-term advantage and, above all, that product and service costs do not exceed market prices. Mazzuco et al., (2017) observe that, in recent decades, accounting practices management have been defined by the appearance of several artifacts, with the greater precision in terms of allocation of costs in products – if stand out in this aspect the Activity-Based Costing (ABC), Activity-Based Management (ABM) and Balanced Scorecard (BSC) - highlighting the ABC method presented by professors Robert Kaplan and Rob Cooper as an alternative to costing methods that would allow more information accurate costs and activities. Understand that the costs of the implementation of the ABC method were extremely high and complicated to implement, in 2004, researchers Kaplan and Anderson suggested a new methodology for ABC, called Activity-Based Costing or Time-Driven Activity-Based Costing (TDABC). The TDABC method simplifies methodology of ABC, when it discards the second stage of Activity-Based Costing and requires estimating only two parameters for its operationalization: the cost of supply resources to a specific activity and the time required to perform it. Given the above, this paper intends to search for the past articles related with the TDABC applied to the services area, specifically in the freight forwarding business, and make an analysis of the main conclusions of them.

## 2. METHODOLOGY

The systematic literature review (SLR) is a research methodology from the medical sciences. The necessity to integrate the results of the different clinical studies, and the consequent promotion of “Evidence-Based Medicine”, transformed SLR into a current and well-matured practice in the scope of medicine. Literature review is a key research step in any field of science. Through its execution the researcher determines the limits of knowledge about the subject of interest, obtaining ways to approach new problems through the knowledge already formed or exploring new approaches to old problems. In the area of logistics and transport, the methods of Narrative Literature Review (NLR) and the Systematic Literature Review (SLR) are commonly used (Loureiro et al., 2016). Using the SLR, this study aims to answer the following research question: What has been investigated in the past years regarding TDABC applied to freight forwarding and services business? Using the platform Web of science, by the end of the first quarter of 2021, it was made a data collection using the option: “TDABC” and “Services” as key words for all the fields, articles published during the last five years in journals index in WOS. This search strategy resulted of 25 articles. From the 25 articles that have been found, only 19 were examined, once the other ones were not related with the subject of this paper or it was not in services’ industry. It is quite interesting that, the only paper published in an accounting journal resulting from our search strategy was excluded because it was about manufacturing industry: “Barros, R. S., & da Costa, A. M. (2017). Time-driven activity-based costing: Designing a model in a Portuguese production environment. *Qualitative Research in Accounting & Management*. 14(1), 1-20”.

## 3. RESULTS AND DISCUSSION

The table 1 resumes the results of the data collected from the Web of Science database. The criteria for the analysis of the following table were the identification of the authors of the article, title, their objectives, applied methodology and the conclusions / contributions identified.

*Table following on the next page*

*Table 1: Research Results*

Authors	Title	Objective(s)	Methodology	Conclusions/Contribution
Akhavan, Sina; Ward, Lorraine; Bozic, Kevin J.	Time-driven Activity-based Costing More Accurately Reflects Costs in Arthroplasty Surgery	Compare the costs associated with (1) primary total hip arthroplasty (THA); (2) primary total knee arthroplasty (TKA); and (3) three surgeons performing these total joint arthroplasties (TJAs) as measured using TDABC versus traditional hospital accounting (TA)	Process maps were developed for each phase of care (preoperative, intraoperative, and postoperative) for patients undergoing primary TJA performed by one of three surgeons at a tertiary care medical center. Personnel costs for each phase of care were measured using TDABC based on fully loaded labor rates, including physician compensation. Costs associated with consumables (including implants) were calculated based on direct purchase price. Total costs for 677 primary TJAs were aggregated over 17 months (January 2012 to May 2013) and organized into cost categories (room and board, implant, operating room services, drugs, supplies, other services). Costs derived using TDABC, based on actual time and intensity of resources used, were compared with costs derived using TA techniques based on activity-based costing and indirect costs calculated as a percentage of direct costs from the hospital decision support system	Traditional hospital cost accounting systems overestimate the costs associated with many surgical procedures, including primary TJA. TDABC provides a more accurate measure of true resource use associated with TJAs and can be used to identify high-cost/high-variability processes that can be targeted for process/quality improvement
Anzai, Yoshimi; Heilbrun, Marta E.; Haas, Derek; Boi, Luca; Moshre, Kirk; Minoshima, Satoshi; Kaplan, Robert; Lee, Vivian S.	Dissecting Costs of CT Study: Application of TDABC (Time- driven Activity- based Costing) in a Tertiary Academic Center	Apply an established cost accounting method, the time-driven activity-based costing (TDABC), to assess the costs of performing an abdomen and pelvis computed tomography (AP CT) in an academic radiology department and identified opportunities for improved efficiency in the delivery of this service	The study was exempt from an institutional review board approval. TDABC utilizes process mapping tools from industrial engineering and activity-based costing. The process map outlines every step of discrete activity and duration of use of clinical resources, personnel, and equipment. By multiplying the cost per unit of capacity by the required task time for each step, and summing each component cost, the overall costs of AP CT is determined for patients in three settings, inpatient (IP), outpatient (OP), and emergency departments (ED)	Approximately 80% of the direct costs of AP CT of the academic medical centre are related to labour. Potential opportunities to reduce the costs include increasing the efficiency of utilization of CT, substituting lower cost resources when appropriate, and streamlining the ordering system to clarify medical necessity and clinical indications
Burns, K. E.; Haysom, H. E.; Higgins, A. M.; Waters, N.; Tahiri, R.; Rushford, K.; Dunstan, T.; Saxby, K.; Kaplan, Z.; Chunilal, S.; McQuilten, Z. K.; Wood, E. M.	A time-driven, activity-based costing methodology for determining the costs of red blood cell transfusion in patients with beta thalassaemia major	Accurately quantify the costs of care for patients with transfusion-dependent thalassemia (TDT), and to evaluate cost-effectiveness of new treatments, data are required on costs of regular red blood cell (RBC) transfusions	It was performed a time-driven activity-based costing (TDABC) study using a health care provider perspective. This was performed over a 1-month period, capturing every step of the transfusion pathway for patients with TDT at a designated provider of specialist thalassemia services in Australia. Detailed process maps were developed to outline treatments and processes directly related to transfusion. For each process map, detailed data collection, including timing of activities, was performed multiple times to account for variation in practice. Costs associated with RBC transfusion were broken down into fixed, process, and RBC procurement costs	Founded significant costs associated with RBC transfusion for TDT, with the product cost contributing less than one-half of the total cost

Gerwin, Philip M.; Norinsky, Rada M.; Tolwani, Ravi J.	Using a time-driven activity-based costing model to determine the actual cost of services provided by a transgenic core	Laboratory animal programs and core laboratories often set service rates based on cost estimates. However, actual costs may be unknown, and service rates may not reflect the actual cost of services. Accurately evaluating the actual costs of services can be challenging and time-consuming	It was used a time-driven activity-based costing (ABC) model to determine the cost of services provided by a resource laboratory at our institution. The time-driven approach is a more efficient approach to calculating costs than using a traditional ABC model	Time-driven ABC model is a powerful management tool that can be applied to other core facilities as well as to entire animal programs, providing valuable information that can be used to set rates based on the actual cost of services and to improve operating efficiency
Gregório, João; Russo, Giuliano; Lapão, Luís Velez	Pharmaceutical services cost analysis using time-driven activity-based costing: A contribution to improve community pharmacies' management	Explore the development of a time-driven activity-based costing (TDABC) model, with the objective of calculating the cost of pharmaceutical services to help inform policymaking	Pharmaceutical services supply patterns were studied in three pharmacies during a weekday through an observational study. Details of each activity's execution were recorded, including time spent per activity performed by pharmacists. Data on pharmacy costs was obtained through pharmacies' accounting records	The presented TDABC model gives new insights on management and costs of community pharmacies. This study shows the importance of cost analysis for health care services, specifically on pharmaceutical services, in order to better inform pharmacies' management and the elaboration of pharmaceutical policies
Ippolito, Adelaide; Boni, Silvia; Cinque, Ettore; Greco, Annarita; Salis, Salima	Using time-driven activity-based costing to establish a tariff system for home health care services	The regional government of Campania, Italy, launched a study with the aim of implementing a tariff system for the provision of home and palliative care services	This study has two distinguishing features: (1) its use to establish a system of tariffs related to services provided over a particular time frame in an individualized care plan, and (2) the method of calculating the daily cost of care (i.e., the cost of a standard day, including access to all healthcare professionals required to care for the patient at home	The study identified a prospective tariff system based on the average total resources absorbed according to the different levels of patient complexity rather than historical costs, that, although it refers to a Italian regional context, it highlights a methodology that can be applied in other countries
Jalalabadi, Faryan; Milewicz, Allen; Shah, Sohail; Hollier, Larry; Reece, Edward	Activity-Based Costing	This study aimed to show how to implement TDABC into the healthcare service	N.A (Systematic methodology)	A clear benefit of Td-ABC in our current health care landscape, is the ability of this costing system to identify inefficiencies in a given production line, thereby identifying opportunities to provide further benefit and value to the patient throughout the health care system
Kurt, Pinar; Saban, Metin; Cankaya, Fikret; Annac, Mehmet Cengiz	Time-Driven Activity-Based Costing in the Ophthalmology Department of State Hospital: A Case Study	This study aimed to show why the TDABC method is applicable and how it can be efficiently applied	N.A (Systematic methodology)	TDABC method can be applied in hospital businesses to obtain accurate cost information, and it is useful in helping hospital management to make strategic decisions. Also, hospital businesses will be able avoid waste of resources by calculating their costs in a realistic way through TDABC method, which will also contribute positively to the environment as the use of medical supplies and the amount of medical waste will be reduced
Laviana, Aaron A.; Ilg, Annette M.; Veruttipong, Darlene; Tan, Hung Jui; Burke, Michael A.; Niedzwiecki, Douglas R.; Kupelian, Patrick A.; King, Chris R.; Steinberg, Michael L.; Kundavaram, Chandan R.; Kamrava, Mitchell; Kaplan, Alan L.; Moriarity, Andrew K.; Hsu, William; Margolis, Daniel J.A.; Hu, Jim C.; Saigal, Christopher S.	Utilizing time-driven activity-based costing to understand the short- and long-term costs of treating localized, low-risk prostate cancer	Given the costs of delivering care for men with prostate cancer remain poorly described, this study reports the results of time-driven activity-based costing (TDABC) for competing treatments of low-risk prostate cancer.	Process maps were developed for each phase of care from the initial urologic visit through twelve years of follow-up for RALP, cryotherapy, HDR and LDR brachytherapy, IMRT, SBRT, and AS. The latter modality incorporated both MRI-fusion and traditional TRUS biopsy. The costs of materials, equipment, personnel, and space were calculated per unit time and based on the relative proportion of capacity used. TDABC for each treatment was defined as the sum of its resources	Use of TDABC is possible in analysing cancer services and provides insights into cost reduction tactics in an era focused on emphasizing value. By detailing all steps from diagnosis and treatment through 12-years of follow-up for low-risk prostate cancer, we demonstrate significant cost variation between competing treatments

Lorena Siguenza-Guzman, Andres Auquilla, Alexandra Van Den Abbeele, Dirk Catrysse	Using Time-Driven Activity-Based Costing to Identify Best Practices in Academic Libraries	Understand if TDABC can be used to enhance process benchmarking in libraries and search if the results at activity level provide additional insights compared to macro result in a process benchmarking	Discuss and compare the workflow of 10 library processes covering the four principal library functions: acquisition, cataloguing, circulation, and document delivery. Next, based on the benchmarking exercise, report and discuss potential processes and performance improvements that can be realized from using library time and costs information, concerning the two libraries analysed	The main conclusion on the first research question is that TDABC can be used to enhance process benchmarking in libraries, through the identification of “best practices” and opportunities for micro improvements
McBain, Ryan K; Jerome, Gregory; Leandre, Fernet; Browning, Micaela; Warsh, Jonathan; Shah, Mahek; Mistry, Bipin; Faure, Peterson Abnis I; Pierre, Claire; Fang, Anna P; Mugunga, Jean Claude; Gottlieb, Gary; Rhatigan, Joseph; Kaplan, Robert	Activity-based costing of health-care delivery, Haiti	Evaluate the implementation of a time-driven activity-based costing analysis at five community health facilities in Haiti	Together with stakeholders, the project team decided that health-care providers should enter start and end times of the patient encounter in every fifth patient’s medical dossier. It was trained one data collector per facility, who manually entered the time recordings and patient characteristics in a database and submitted the data to a cloud-based data warehouse each week. calculated the capacity cost per minute for each resource used. An automated web-based platform multiplied reported time with capacity cost rate and provided the information to health-facilities administrators	Time-driven activity-based costing can be implemented in low-resource settings to guide resource allocation decisions. However, the extent to which this information will drive observable changes at patient, provider and institutional levels depends on several contextual factors, including budget constraints, management, policies, and the political economy in which the health system is situated
Ostadi, Bakhtiar; Mokhtarian Daloie, Reza; Sepehri, Mohammad Mehdi	A combined modelling of fuzzy logic and Time-Driven Activity-based Costing (TDABC) for hospital services costing under uncertainty	Apply the fuzzy logic in the TDABC model to resolve the inherent ambiguity and uncertainty and determine the best possible values for cost, capacity, and time parameters to provide accurate information on the costs of the healthcare services	The proposed model is implemented in a sample of the hospital laboratory section and the results are compared with the TDABC system	The results of this study demonstrate that under uncertainty conditions, using the proposed model leads to more accurate and useful results compared to the TDABC system. Hence, hospitals can use this model to reduce the uncertainty of the data and make more accurate and consistent decisions using the cost data obtained from it
Ozyapici, Hasan; Tanis, Veyis Naci	Improving health care costing with resource consumption accounting	The aim of the present study was to explore the differences between resource consumption accounting (RCA) and time-driven activity-based costing (TDABC) systems in determining the costs of services of a healthcare setting	A case study was conducted to calculate the unit costs of open and laparoscopic gall bladder surgeries using TDABC and RCA	Unlike TDABC, RCA calculates lower costs for unused capacities but higher costs for products or services in a healthcare setting in which fixed costs make up a high proportion of total costs
Popat, Keyuri; Gracia, Kelly Ann; Guzman, Alexis B.; Feeley, Thomas W.	Using Time-Driven Activity-Based Costing to Model the Costs of Various Process-Improvement Strategies in Acute Pain Management	Demonstrate how time-driven activity-based costing (TDABC) can be used to assess personnel costs and create process-improvement strategies	TDABC was used to evaluate the cost of providing pain control to patients undergoing thoracic surgery and to estimate the impact of specific process improvements on cost. Retrospective healthcare utilization data, with a focus on personnel costs, were used to assess cost across the entire cycle of acute pain medicine delivery for these patients. TDABC was used to identify possible improvements in personnel allocation, workflow changes, and epidural placement location and to model the cost savings of those improvements	Founded that the cost of placing epidurals in the preoperative holding room was less than that of placing epidurals in the operating room. Personnel reallocation and workflow changes resulted in mean cost reductions of 14% with epidurals in the holding room and 7% cost reductions with epidurals in the operating room. Most cost savings were due to redeploying anaesthesiologists to duties that are more appropriate and reducing their unnecessary duties by 30%

Ruhumuriza, J.; Odhiambo, J.; Riviello, R.; Lin, Y.; Nkurunziza, T.; Shrimme, M.; Maine, R.; Omondi, J. M.; Mpirimbanyi, C.; de la Paix Sebakarane, J.; Hagugimana, P.; Rusangwa, C.; Hedi-Gauthier, B.	Assessing the cost of laparotomy at a rural district hospital in Rwanda using time-driven activity-based costing	Understand the costs of a laparotomy at a rural district hospital in Rwanda using time-driven activity-based costing.	This costing study included patients with acute abdominal conditions at three rural district hospitals in 2015 in Rwanda and used a time-driven activity-based costing methodology. Capacity cost rates were calculated for personnel, location, and hospital indirect costs, and multiplied by time estimates to obtain allocated costs. Costs of medications and supplies were based on purchase prices	The intraoperative cost of laparotomy was like previous estimates, but any plan to scale-up laparotomy capacity at district hospitals should consider the sizeable preoperative and postoperative costs. Although lack of personnel and limited infrastructure are commonly cited surgical barriers at district hospitals, personnel and location costs were among the lowest cost contributors; similar location-related expenses at tertiary hospitals might be higher than at district hospitals, providing further support for decentralization of these services
Sharan, Alok D.; Schroeder, Gregory D.; West, Michael E.; Vaccaro, Alexander R.	Understanding time-driven activity-based costing	Explanation about how to apply TDABC method on the hospitals	Explanation method about how to perform and apply TDABC step by step	If TDABC is more commonly used by health care providers, it is likely that the process of performing this analysis may evolve to be more exact. The benefit of TDABC is that it gives providers a starting point for accurate cost accounting. As resources become more limited in the future it will increasingly important for providers to understand their true costs in providing specific services. TDABC is one method that provider scan uses to perform that analysis
Siguenza-Guzman, Lorena; Auquilla, Andres; Van den Abbeele, Alexandra; Cattrysse, Dirk	Using Time-Driven Activity-Based Costing to Identify Best Practices in Academic Libraries	Application of TDABC in academic library to provide high quality services despite their limited budget. (Increase efficiency)	It was adopted quantitative and qualitative methods to evaluate the library's loan and return processes. i) analyzed cost data, ii) interviewed the library's staff, and iii) recorded the duration for all relevant activities with a stopwatch. The activities' duration was recorded via direct observation. The data were collected during the academic year 2017–2018 to cover all the different academic periods	The automation of repetitive processes in the circulation department may significantly decrease the operating costs. This may be achieved by reducing the number of staff and replacing them by robotic services
Simmonds, Jonathan C.; Hollis, Russell J.; Tamberino, Ruby K.; Vecchiotti, Mark A.; Scott, Andrew R.	Comparing the real and perceived cost of adenotonsillectomy using time-driven activity-based costing	This study aims to measure the costs of treating obstructive sleep apnea (OSA) in children with an adenotonsillectomy using time-driven activity-based costing (TDABC) and explore how this differs from cost estimates using traditional forms of hospital accounting.	A total of 53 pediatric patients with symptoms of OSA or sleep-related breathing disorder were followed from their initial appointment through surgery to their postoperative visit at an academic medical center. Personnel timing and overhead costs were calculated for TDABC analysis	Through TDABC, we were able to highlight how traditional RVU-based hospital accounting systems apportion all overhead costs, including items such as orthopedic implants, evenly across specialties, thus increasing the perceived cost of equipment-light procedures such as adenotonsillectomies. We suspect that providers who perform a TDABC analysis at their home institution or practice will find their own unique insights, which will help them understand and control the different components of healthcare costs
Teece, David J.	Business process management notation for a costing model conception	Aim the importance of business processes modelling as a precondition system design. Although many managers worry the entity's expenses, some are unaware of the process and procedures adopted by his subordinates. Searching is to calculate spending on each step to a proper business process management	Shows the concepts of Activity based costing and it's updates, the TDABC, to support the development of a costing system for public universities	It can be concluded that public processes, implemented in public services are both complex and bureaucratic, mainly due to regulations. The bidding procedure of acquisition materials or services demand eight sectors activities

Examining the information from Table 1, is possible to conclude that TDABC can be applied not only at the production industry, but also on the services business. As we can see from the results of the previous studies, TDABC has been applied to understand the cost allocation, mainly in the healthcare business. In most of the analysed articles, when TDABC is applied to the hospital healthcare services, it helps to obtain accurate cost information, and it is useful, serving hospital management to make strategic decisions.



A clear benefit of TDABC in current health care landscape is the ability of this costing system to identify inefficiencies in each production line and, in that way identify opportunities to provide further benefits and value to the patient throughout the health care system.

#### 4. CONCLUSION

According to literature, the benefit of TDABC is that it gives providers a starting point for accurate cost accounting. As resources become more limited in the future it will increasingly be important for providers to understand their true costs in providing specific services. This can be use in collecting information's regarding new investments or how to improve the management of the resources that administrators have to their disposition. The results suggest that nearly all articles are published in health journals and fall on hospital units predominantly from EU and US countries. Regarding the topics under study, the studies dedicated to cost calculation stand out. Generally, the papers follow an empirical and qualitative approach. Regardless of the limitations and bias intrinsic to the methodology followed, this study is of great relevance for academics who intend to investigate this issue and for managers of logistics or accounting professionals who deal with these problematic. Having in mind the huge diversity of scientific approaches and theoretical perspectives under which the theme is studied, and considering the growing dynamic of international business, it is expected that near future will bring new testimonies and solutions for cost calculations and cost management of logistic operations. Regarding to the freight forwarding business, it was not found any material regarding the application of TDABC. This means that for further research TDABC could be tested and applied in the freight forwarding business, to improve profitability and helping in the decision making of the administration once it gives a more detailed insight of the cost structure of the companies.

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#### LITERATURE:

1. Akhavan, S., Ward, L., & Bozic, K. J. (2016). Time-driven Activity-based Costing More Accurately Reflects Costs in Arthroplasty Surgery. *Clinical Orthopaedics & Related Research*, 474(1), 8–15. <https://doi.org/10.1007/s11999-015-4214-0>
2. Anzai, Y., Heilbrun, M. E., Haas, D., Boi, L., Moshre, K., Minoshima, S., Kaplan, R., & Lee, V. S. (2017). Dissecting Costs of CT Study: Application of TDABC (Time-driven Activity-based Costing) in a Tertiary Academic Center. *Academic Radiology*, 24(2), 200–208. <https://doi.org/10.1016/j.acra.2016.11.001>
3. Araújo, M. B., Rodrigues Filho, B. A., & Gonçalves, R. F. (2016). Business Process Management Notation for a Costing Model Conception. *Brazilian Journal of Operations & Production Management*, 13(3), 244. <https://doi.org/10.14488/BJOPM.2016.v13.n3.a2>
4. Burns, K. E., Haysom, H. E., Higgins, A. M., Waters, N., Tahiri, R., Rushford, K., Dunstan, T., Saxby, K., Kaplan, Z., Chunilal, S., McQuilten, Z. K., & Wood, E. M. (2019). A time-driven, activity-based costing methodology for determining the costs of red blood cell transfusion in patients with beta thalassaemia major. *Transfusion Medicine*, 29(1), 33–40. <https://doi.org/10.1111/tme.12523>
5. Everaert, P., Bruggeman, W., Sarens, G., Anderson, S. R., & Levant, Y. (2008). Cost modeling in logistics using time-driven ABC: Experiences from a wholesaler" *International Journal of Physical Distribution & Logistics Management*, 38 (3), 171-189

6. Gerwin, P. M., Norinsky, R. M., & Tolwani, R. J. (2018). Using a time-driven activity-based costing model to determine the actual cost of services provided by a transgenic core. *Journal of the American Association for Laboratory Animal Science*, 57(2), 157–160.
7. Gregório, J., Russo, G., & Lapão, L. V. (2016). Pharmaceutical services cost analysis using time-driven activity-based costing: A contribution to improve community pharmacies' management. *Research in Social and Administrative Pharmacy*, 12(3), 475–485. <https://doi.org/10.1016/j.sapharm.2015.08.004>
8. Hoozée, S., Vermeire, L., & Bruggeman, W. (2009). *A risk analysis approach for time equation-based costing*.
9. Ippolito, A., Boni, S., Cinque, E., Greco, A., & Salis, S. (2016). Using time-driven activity-based costing to establish a tariff system for home health care services. *Journal of Healthcare Management*, 61(6), 436–448. <https://doi.org/10.1097/00115514-201611000-00009>
10. Jalalabadi, F., Milewicz, A., Shah, S., Hollier, L., & Reece, E. (2018). Activity-Based Costing. *Seminars in Plastic Surgery*, 32(04), 182–186. <https://doi.org/10.1055/s-0038-1672208>
11. Kissa, B., Stavropoulos, A., Karagiorgou, D., & Tsanaktsidou, E. (2019). Using time-driven activity-based costing to improve the managerial activities of academic libraries. *Journal of Academic Librarianship*, 45(5), 102055. <https://doi.org/10.1016/j.acalib.2019.102055>
12. Kurt, P., Saban, M., Cankaya, F., & Annac, M. C. (2019). Time-Driven Activity-Based Costing in the Ophthalmology Department of State Hospital: a Case Study. *Fresenius Environmental Bulletin*, 28(4), 2754–2770.
13. Laviana, A. A., Ilg, A. M., Veruttipong, D., Tan, H. J., Burke, M. A., Niedzwiecki, D. R., Kupelian, P. A., King, C. R., Steinberg, M. L., Kundavaram, C. R., Kamrava, M., Kaplan, A. L., Moriarity, A. K., Hsu, W., Margolis, D. J. A., Hu, J. C., & Saigal, C. S. (2016). Utilizing time-driven activity-based costing to understand the short- and long-term costs of treating localized, low-risk prostate cancer. *Cancer*, 122(3), 447–455. <https://doi.org/10.1002/cncr.29743>
14. Lin, N., Fu, Y. C., & Hsung, R. M. (2017). The position generator: Measurement techniques for investigations of social capital. In *Social Capital: Theory and Research*. <https://doi.org/10.4324/9781315129457-3>
15. Loureiro, S. A., Noletto, A. P. R., Da Silva Santos, L., Silva Santos Júnior, J. B., & Fontes Lima Júnior, O. (2016). O uso do método de revisão sistemática da literatura na pesquisa em logística, transportes e cadeia de suprimentos. *Transportes*, 24(1), 95. <https://doi.org/10.14295/transportes.v24i1.919>
16. Mazzuco, M. A. S., Wronski, P. G., & Zonatto, V. C. da S. (2017). Custeio Baseado em Atividades e Tempo (TDABC): um estudo em uma instituição de ensino superior do sul do estado de Santa Catarina. *XXIV Congresso Brasileiro de Custos, Florianópolis, SC, Brasil*.
17. McBain, R. K., Jerome, G., Leandre, F., Browning, M., Warsh, J., Shah, M., Mistry, B., Faure, P. A. I., Pierre, C., Fang, A. P., Mugunga, J. C., Gottlieb, G., Rhatigan, J., & Kaplan, R. (2018). Activity-based costing of health-care delivery, Haiti. *Bulletin of the World Health Organization*, 96(1), 10–17. <https://doi.org/10.2471/BLT.17.198663>
18. Menendez, M. E., Lawler, S. M., Ring, D., & Jawa, A. (2018). High pain intensity after total shoulder arthroplasty. *Journal of Shoulder and Elbow Surgery*, 27(12), 2113–2119. <https://doi.org/10.1016/j.jse.2018.08.001>
19. Norek, C. D., & Pohlen, T. L. (2001). Cost Knowledge: A Foundation for Improving Supply Chain Relationships. *The International Journal of Logistics Management*, 12(1), 37–51. <https://doi.org/10.1108/09574090110806217>

20. Ostadi, B., Mokhtarian Daloie, R., & Sepehri, M. M. (2019). A combined modelling of fuzzy logic and Time-Driven Activity-based Costing (TDABC) for hospital services costing under uncertainty. *Journal of Biomedical Informatics*, 89(June 2018), 11–28. <https://doi.org/10.1016/j.jbi.2018.11.011>
21. Ozyapici, H., & Tanis, V. N. (2016). Improving health care costing with resource consumption accounting. *International Journal of Health Care Quality Assurance*, 29(6), 646–663. <https://doi.org/10.1108/IJHCQA-04-2015-0045>
22. Popat, K., Gracia, K. A., Guzman, A. B., & Feeley, T. W. (2018). Using Time-Driven Activity-Based Costing to Model the Costs of Various Process-Improvement Strategies in Acute Pain Management. *Journal of Healthcare Management*, 63(4), e76–e85. <https://doi.org/10.1097/JHM-D-16-00040>
23. Ruhumuriza, J., Odhiambo, J., Riviello, R., Lin, Y., Nkurunziza, T., Shrimme, M., Maine, R., Omondi, J. M., Mpirimbanyi, C., de la Paix Sebakarane, J., Hagugimana, P., Rusangwa, C., & Hedt-Gauthier, B. (2018). Assessing the cost of laparotomy at a rural district hospital in Rwanda using time-driven activity-based costing. *BJS Open*, 2(1), 25–33. <https://doi.org/10.1002/bjs5.35>
24. Shapiro, B. P., Rangan, V. K., Moriarty, R. T., & Ross, E. B. (1987). Manage customers for profits (not just sales). *Harvard Business Review*.
25. Sharan, A. D., Schroeder, G. D., West, M. E., & Vaccaro, A. R. (2016). Understanding time-driven activity-based costing. *Journal of Spinal Disorders and Techniques*, 29(2), 62–65. <https://doi.org/10.1097/BSD.0000000000000360>
26. Siguenza-Guzman, L., Auquilla, A., Van den Abbeele, A., & Cattrysse, D. (2016). Using Time-Driven Activity-Based Costing to Identify Best Practices in Academic Libraries. *Journal of Academic Librarianship*, 42(3), 232–246. <https://doi.org/10.1016/j.acalib.2016.01.005>
27. Simmonds, J. C., Hollis, R. J., Tamberino, R. K., Vecchiotti, M. A., & Scott, A. R. (2019). Comparing the real and perceived cost of adenotonsillectomy using time-driven activity-based costing. *Laryngoscope*, 129(6), 1347–1353. <https://doi.org/10.1002/lary.27648>
28. Teece, D. J. (2010). Business Models, Business Strategy and Innovation. *Long Range Planning*, 43(2–3), 172–194. <https://doi.org/10.1016/j.lrp.2009.07.003>
29. Thaker, N. G., Ali, T. N., Porter, M. E., Feeley, T. W., Kaplan, R. S., & Frank, S. J. (2016). Communicating value in health care using radar charts: A case study of prostate cancer. *Journal of Oncology Practice*, 12(9), 813–820. <https://doi.org/10.1200/JOP.2016.011320>
30. Themido, I., Arantes, A., Fernandes, C., & Guedes, A. P. (2000). Logistic costs case study - an ABC approach. *Journal of the Operational Research Society*, 51(10), 1148–1157. <https://doi.org/10.1057/palgrave.jors.2601031>
31. Zhuang, C., Ma, Q., & Yoshikawa, M. (2017). SNS user classification and its application to obscure POI discovery. *Multimedia Tools and Applications*, 76(4), 5461–5487. <https://doi.org/10.1007/s11042-016-4034-6>

## CLUSTER DYNAMICS' FRAMEWORK

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### ABSTRACT

*The present research aims to present a framework for clusters dynamics. Cluster Life Cycle the most prominent theory that analyses the evolution of clusters was chosen as a ground for its development. Main sages of CLC were identified as Emergence, Growth, Maturity, Decline and Renewal, accounting that the cluster's evolution does not necessarily will happen in this sequence. But nevertheless, every stage of CLC has its own characteristics and parameters of identification. Within the elaborated model the following parameters were allocated: Number of Firms and Employees, Cluster Brand, Innovation, Network, Policies and Regulations, External Markets & FDI. Considering changes within the cluster according to these parameters makes it possible to identify the stages of its CLC. Finally, the Model of Identification of CLC stage was provided which will be used in further empirical research.*

**Keywords:** *Cluster, Cluster Life Cycle, Cluster evolution, CLC stages, CLC parameters, Model of CLC Identification*

### 1. INTRODUCTION

Cluster stands for "geographic concentrations of interconnected companies, specialised suppliers, service providers, firms in related industries, and associated institutions (e.g., universities, standards agencies, trade associations) in a particular field that compete but also cooperate" (M. E. Porter, 2000, p. 15). Although the interest in the agglomeration economy and the geographical distribution of economic activities started in the 19th century since Alfred Marshall works on Industrial districts, only since the 90s of last century, it became one of the most relevant research themes (Cruz & Teixeira, 2010). Clusters have proven to be beneficial to companies' innovation and performance (Conz, Denicolai, & Zucchella, 2017; Desmarchelier & Zhang, 2018; Doloreux & Lord-Tarte, 2013; Felzensztein, Gimmon, & Deans, 2018; Kowalski, 2014; Platform, 2021; M. Porter, 1998; Trippl, Grillitsch, Isaksen, & Sinozic, 2015), however, this effect is not constant as positive agglomeration effects, during the early stages of the cluster life cycle, are replaced by congestion effects that negatively constrain firms in later stages of cluster life cycle (Dyba, Strykiewicz, & De Marchi, 2020; Martin & Sunley, 2011; Menzel & Fornahl, 2010), justifying this study. "Clustered companies outperform non-clustered companies at the beginning of the life cycle and have worse performance at its end" (Menzel & Fornahl, 2010, p. 206). In this context, Cluster Life Cycle (CLC) theory became one of the prominent research areas on clusters (Lazzeretti, Capone, Caloffi, & Sedita, 2019), and search for understanding cluster evolution through CLC recently became an academic hit (Pronestì, 2019). As clusters are not a static phenomenon; their structure and composition change (Trippl et al., 2015); they continually evolve, maintaining vibrancy as competitive locations for centuries or losing their competitive edge due to both

external and internal forces (M. Porter, 1998). “The existence and structure of clusters can only be understood when studying their dynamics over time” (Boschma & Fornahl, 2011, p. 1295). This theory considers that clusters can develop and go through stages of birth, growth, maturity, decline or renovation. However, contemporary views on this cyclic development do not imply any imminent logic or sequence of the development, so, for instance, at any time, a cluster can enter either decline or enter the stage of renovation. It is necessary to understand the concept of Life Cycle, which connects business decision making (especially strategic) with the development of the firm's outer complexity (Sabot, Šander, & Fučkan, 2013). However, there is still no consensus on the model and parameters to apply in analyzing, identifying and defining the stage in the life cycle of a cluster, requiring further development of the model that consequently will be applied in the future research. Defining the stage in the cluster life cycle for a specific cluster may allow to analyze the cluster's environment going beyond the static understanding of local attributes' influence on firm's strategy and performance.

## **2. CLUSTER DYNAMICS FRAMEWORK**

### **2.1. Cluster Life Cycle theory**

The Product Life Cycle theories (Levitt, 1965) and the Industry Life Cycle (Klepper, 1997) served as inspiration for the emergence of the Cluster Life Cycle theory. However, clusters' and industries' lifecycles are not the same; different clusters belonging to the same industry can follow very different growth paths. Different clusters in the same industry follow distinct evolutionary paths (Scur & Garcia, 2019). Clusters can grow or decline independently of the industry's development for reasons such as homogeneity or heterogeneity in competencies and cluster-specific technological or institutional lock-ins (Trippel et al., 2015). Cluster is a regional phenomenon, so Evolutionary Economic Geography (EEG) also inspired developments of cluster life cycle theory (Mobedi & Tanyeri, 2019), incorporating some of its concepts such as path development and lock-in situations (Martin, 2009; Martin & Sunley, 2006). “Path dependency and lock-in are two closely related concepts that are used to analyse differences in the ability of regional economies to reshape adjustment problems. Both concepts emphasise the importance of context and history in regional processes of industrial evolution” (Vanthillo, Cant, Vanelander, & Verhetsel, 2018, p. 1522). Belussi and Sedita (2009) acknowledge that choices made in the past (technologies embodied in firms, labour skills acquired, etc.) influence subsequent choices and, for this reason, the economic performance of a territory - the past-dependence argument. Nevertheless, at the same time, it does not imply the rigid sequence determined by the past as spatial path dependence is not only past/place dependence. Therefore, a cluster has its development cycle, making it necessary to study the logic of cluster evolution, considering its regional past and possible future developments. One of the most important impulses for the growing research on CLC was the development of the identification model of CLC, proposed by Menzel and Fornahl (2010). It allows to measure cluster's internal dynamic and identify the stage of its life cycle, precisely what was deployed by many CLC researchers (Branco & Lopes, 2013; Dyba et al., 2020; Elola, Valdaliso, Franco, & López, 2017; Elola, Valdaliso, López, & Aranguren, 2012; Mahroum & Al-Saleh, 2015; Mobedi & Tanyeri, 2019; O'Connor, Doyle, & Brosnan, 2017; Santner, 2018; Shin & Hassink, 2011; Tavassoli & Tsagdis, 2014; Viederytė, 2018). Despite its wide application, the lifecycle approach received some criticism (especially in its initial stage). It was considered too fatalistic and deterministic (Knop, Olko, & Stachowicz, 2011; Martin & Sunley, 2011), with lack of attention to external factors (Martin & Sunley, 2011; Rodríguez-Rodríguez, Morrison, & Troncoso-Ojeda, 2016), not considering the role of agency (Hassink, Isaksen, & Trippel, 2019; Martin & Sunley, 2006; Trippel et al., 2015), neither institutions (Harris, 2020; Hassink et al., 2019). With a focus on the non-deterministic nature of regional evolution and existing external influence, the adaptive cycle model emerged (Martin & Sunley, 2011).

This idea of multiple regional path development and external influence has enriched the Cluster Life Cycle research and, consequently, was adopted in many studies (Branco & Lopes, 2013; Carli & Morrison, 2018; Desmarchelier & Zhang, 2018; Mobedi & Tanyeri, 2019; O'Connor et al., 2017; Rodríguez-Rodríguez et al., 2016; Santner, 2018; Scur & Garcia, 2019). It was proved to be a useful framework of analysis to unravel the evolution of clusters (Carli & Morrison, 2018). Nowadays, cluster life-cycle approach has gone through a period of stagnation and could benefit from contributions in recent conceptual advances from evolutionary and institutional economic geographies (Harris, 2020). “By applying this typology of path development to clusters, we can hopefully develop a better understanding of how actors can change the evolutionary trajectories of clusters over long periods of time in a path dependent manner” (Harris, 2020, p. 8). Thus, Cluster Life Cycle have incorporated the idea of cyclic evolution with subsequent admission of non-deterministic trajectories and shifting the attention from only endogenous factors of cluster dynamics to account for exogenous factors as well. It has also increased the understanding of the role of agency in cluster evolution. Menzel and Fornahl (2010) and Martin and Sunley (2011) develop the two cornerstone models of cluster dynamics. However, these ideas will be enriched by other CLC contributions and EEG developments, specifically by Harris's (2020) convergence framework. Further, the stages of CLC will be defined and characterized.

## **2.2. Identification of CLC stages**

There is still no consensus on a particular identification of phases or terminology, but they all follow the same logic, pointing out the appearance, development, and exhaustion of the cluster phenomenon in parallelism to "life" itself. Additionally, it is noted that clusters do not jump from one stage to another but slowly turn to the next stage (Menzel & Fornahl, 2010). From the analysis of these studies, the division of the "life" of the cluster into 4 phases, that are: birth, growth, maturity, and decline or renewal, - seems to be the most consensual (F. Belussi, 2018; Bergman, 2008; Brenner & Schlump, 2011; Elola et al., 2012; Martin & Sunley, 2011; Menzel & Fornahl, 2010; Pronestì, 2019; Shin & Hassink, 2011; Sölvell, 2009; Swann, 1998; Tavassoli & Tsagdis, 2014; Ter Wal & Boschma, 2011; Tichy, 1998; Tripl et al., 2015; Van Klink & De Langen, 2001; Wolter, 2003). However, nowadays CLC terminology is converging with path development concepts (Blažek, Květoň, Baumgartinger-Seiringer, & Tripl, 2020; Harris, 2020), freeing CLC stages identifications from certain rigidity, allowing to see different tendencies and gradual transitions within cluster dynamics that otherwise may not be observed. Nevertheless, we are going to maintain the division of the cluster life cycle in 4 stages, but include “path” lenses in its consideration. Concordantly, the following stages and terminology is proposed: emergence stage (path emergence), growth stage (path development), maturity stage (path sustainment), decline stage (path contraction) and renewal stage (path transformation). It is stressed that a cluster does not necessarily pass them in the specified sequence. Nevertheless, each stage of development will have its unique characteristics.

### **2.2.1. Emergence Stage**

*Emergence stage* is a very early, upstream, and explorative phase of the CLC (Pronestì, 2019). Various events can lead to the emergence of the cluster, including historical events, some isolated initiative or even luck (Desmarchelier & Zhang, 2018). At this point the rise of entirely new industries based on radically new technologies, scientific discoveries, social innovation or new business models can occur - that is Path creation. Or the path importation can happen, when established industries from outside the region are attracted and anchored. At this stage, only a few companies exist and relationships between customers and suppliers are scarce (Menzel & Fornahl, 2010). It is a very embryonic form of firms' geographic concentration. Just few (focal) firms hold the necessary economic and entrepreneurial knowledge to successfully

penetrate new markets and exploit novel technologies (Pronestì, 2019). The local fabric of institutions, knowledge and competencies is not yet formed (F. Belussi, 2018). There are low critical mass, low identity, and low linkages (Davis, 2006). The cluster has an undefined structure, dispersed spatial configuration, and lack of formalised cooperation among actors (Pronestì, 2019). Networks are unstable (Fornahl, Hassink, & Menzel, 2015), interactions are informal (Dyba et al., 2020), it is the beginning of collaboration, there are both formal and non-formal institutions (Handayani, Cakravastia, Diawati, & Bahagia, 2011). A group of regional entities (companies, scientific entities and administration) identify a possibility of cooperation and expertise and knowledge to be obtained or created (Knop et al., 2011). Knowledge is heterogeneous, often tacit, concentrated within a few leading firms (Dyba et al., 2020). There is a tendency towards innovativeness and entrepreneurship (Pronestì, 2019). “A growing stock of available knowledge and competences allows the growth of the cluster, represented by a growing number of firms and supportive institutions” (Dyba et al., 2020, p. 1982).

### 2.2.2. *Growth Stage*

Cluster enters a *growth stage* when it concentrates a critical mass of heterogeneous actors that generate several positive externalities attracting newcomers and fostering the creation of spin-offs (Desmarchelier & Zhang, 2018). After establishing and getting enough economic strength, focal firms act as trailblazers for developing the cluster (Pronestì, 2019). At this stage, there is a substantial increase in employment due to business growth and a large number of start-ups, creating more and more possibilities for developing innovation networks or customer-supplier relationships, forming a specialised labour market (Martin & Sunley, 2011; Menzel & Fornahl, 2010; Sölvell, 2009). Spatial and thematic boundaries are being defined (Menzel & Fornahl, 2010). Linkages are being developed, and innovation is high (Davis, 2006). Companies' heterogeneity increases strongly because each new company launches into new technological areas of the cluster (Menzel & Fornahl, 2010). There is an emergence of a set of cluster-specific institutions (F. Belussi, 2018), especially the growing science knowledge-base, which allows firms to cooperate with universities and research centers and various networks of formal and informal cooperation grow in number and density (Dyba et al., 2020). Collaboration activity is increased by having a formal institution and awareness from all members of the importance of cooperation (Handayani et al., 2011). Newcomers have significant opportunities to interact with the more connected agents in the network and become well connected themselves (Desmarchelier & Zhang, 2018). In this context, the locational benefits for firms entering the cluster become incredibly high and profitability of insider businesses rises, reaching its peak (Pronestì, 2019). Economies of scale, technologies and company routines drive growth, often aided by deliberate policies dedicated to expansion (Bergman, 2008). Thus, growing clusters will enter into a process of international competition, both in the factor market (attractiveness of new companies, people and capital) and the product markets (Sölvell, 2009). International competition and global demand lead to companies' internationalisation both in the commercial and production areas (Elola et al., 2012).

### 2.2.3. *Maturity Stage*

*Maturity stage* starts when a cluster reflects a “state of equilibrium”, that “shows neither a high growth compared to the respective industry nor a remarkable decrease in the number of companies or employees” (Menzel & Fornahl, 2010, p. 227), although, a decrease in frequency and number of entries is noted (Pronestì, 2019). The system becomes well established around a particular form (Martin & Sunley, 2011), having high critical mass and high identity (Davis, 2006). Clusters reach their maximum size, have a well-shaped network structure, precisely defined core business (Pronestì, 2019). The collaborations among the stakeholders reach a peak (Handayani et al., 2011), so mature clusters develop more collective action capabilities than

newer clusters (Fornahl et al., 2015). Due to the well-established and dense networks of cooperation various competences of companies are more accessible, and the connections of cluster companies with organisations and companies from abroad bring new knowledge to the cluster (Menzel & Fornahl, 2010). Thus, on one hand clusters have knowledge pools that are homogeneous and accessible to all cluster stakeholders: but, simultaneously, firms based in mature clusters rely on a more extensive portfolio of knowledge sources than those in growing clusters (Dyba et al., 2020). Local firms maintain their ability to renew their innovative capabilities, but they rarely generate radical or breakthrough innovations (F. Belussi, 2018), usually latest technologies are integrated into the cluster, but from the same technological area (Menzel & Fornahl, 2010). Therefore, the cluster develops its structures and social responsibility; however, with the slowing down of its main dynamics (Knop et al., 2011). A tendency towards high specialisation (if not over-specialisation) of the cluster narrowing the variety of economic activities and the heterogeneity of available knowledge can eventually lead to lock-in (Pronești, 2019; Vanthillo et al., 2018).

#### 2.2.4. Decline Stage

*Decline stage* is reflected in a dramatic decrease in the number of firms and employees mainly due to firms' exit (Pronești, 2019; Trippl et al., 2015), bankruptcies, mergers and rationalisations (Menzel & Fornahl, 2010). The number of companies and existing networks become less productive (Trippl et al., 2015), and consequently the cluster becomes locked within long, closed, homogeneous, redundant networks unable to renew the cluster by integrating new knowledge (Dyba et al., 2020). A declining cluster "lost the ability to sustain its diversity, its ability to adjust to changing conditions as well as its potential for an independent renewal" (Menzel & Fornahl, 2010, p. 227). Thus, the cluster goes into *museum* mode (Sölvell, 2009). Possible trajectories are: path downgrading (serving yet lower market segments and/or to perform mere low-value-adding production activities); path contraction (key companies tend to make new investments in order to enhance their position in selected and demanding niches); and path delocalisation (relocation of key economic activities) (Blažek et al., 2020). However, the decline is not the only way to cluster. "Clusters can also renew themselves. By integrating and applying new technologies and knowledge, they move back to an earlier phase of the cluster life cycle and can enter new growth phases" (Menzel & Fornahl, 2010, p. 211).

#### 2.2.5. Renewal Stage

*Renewal stage* is a reorganisation stage, when happening the reconfiguration, experimentation and restructuring, in which accumulation of resources is slow, connectedness is low, and resilience is increased because several options may be open to as to which direction and in which form a new system develops (Martin & Sunley, 2011). Clusters can renew themselves by taking advantage of specific existing capacities and infrastructures and build new industrial and sectoral identities (Trippl et al., 2015). New ideas are the beginning of new networks and structures that result in a new cluster (Knop et al., 2011), or the cluster enters "renaissance" (Sölvell, 2009). The main point is heterogeneity; when it increases, the cluster enters again in a new growth phase (Menzel & Fornahl, 2010). This increase in heterogeneity can be incremental, with the integration of new knowledge in the same technological trajectory of the cluster, or it can be of a more radical nature by integrating new technologies. The change can be so cardinal that clusters go entirely out to new areas. A radical, innovation-based form of path development is path transformation, where an established path and the regional support structures it is embedded in do undergo major change (Blažek et al., 2020).



### 2.3. Parameters of CLC Identification

From presented above analysis of the relevant literature on CLC the following *parameters*, playing the major role at every stage are allocated: *Companies* (Blažek et al., 2020; Desmarchelier & Zhang, 2018; Menzel & Fornahl, 2010); *Employees* (Menzel & Fornahl, 2010); *Innovation* (Bergman, 2008; Harris, 2020; Menzel & Fornahl, 2010; Tripl et al., 2015); *Network* (F. Belussi, 2018; Fornahl et al., 2015; Handayani et al., 2011; Knop et al., 2011; Menzel & Fornahl, 2010; Pronestì, 2019; Tripl et al., 2015); *Cluster Identity / Brand* (Belussi & Caloffi, 2018; Davis, 2006; Menzel & Fornahl, 2010; Pronestì, 2019); *Policies and Regulations* (Bergman, 2008; Sölvell, 2009); *External markets - exports /FDI* (Elola et al., 2012; Sölvell, 2009).

### 2.4. Cluster Life Cycle Model

Grounding in these parameters, a dynamic Model of CLC is proposed (Table 1).

Parameters	Cluster Life Cycle				
	<i>Emergency</i>	<i>Growth</i>	<i>Maturity</i>	<i>Decline / or</i>	<i>/ Renovation</i>
<i>Cluster Identity</i>	Low	Being defined	Precisely defined core business	-----	-----
<i>Companies</i>	Small number	Increase	Stabilization	Decrease, relocation	Increase again
<i>Employees</i>	Small number	Increase	Stabilization	Decrease	Increase again
<i>Network</i>	Unstable, begins identification of partners	Productive networks	Network well-established and dense	Smaller networks, that are blocking and non-productive	Restructuring
<i>Innovation</i>	Innovation and Entrepreneurship	High	Incremental Innovation	Decrease	Integration of newness technologies or exit to a new area
<i>Policies and regulation</i>	-----	Expansion aids	-----	Salvation of companies	-----
<i>External markets - exports /FDI</i>	Small quantity exported	New markets, export growth	Stabilization	Decrease	New markets, export growth

Table 1: Cluster Life Cycle Identification Model.  
(Source: Own Elaboration)

Thus, diverse stages of CLC will create certain conditions of rivalry and competition, human capital, inert-actor relations in network, innovation, policies and external markets behavior that provide different conditions where firms' will elaborate their strategic choice that will be reflected in their performance.

#### 4. CONCLUSION

Thus, clusters play a crucial role in regional and national economic development, providing various advantages to stakeholders, and especially firms. For that reason, they became an integral part of regional development policies, including converging with Smart Specialization Policies adopted by the European Union. However, despite, clusters, generally, are associated with various benefits they provide to firms, it was pointed out that depending on the evolution of the cluster the co-location might or might not be beneficial to firms. As clusters are not a static phenomenon; consequently, the dynamic approach became necessary, opening the way to the appearance of the cluster life cycle theory. Within this perspective, there are several paths of evolution of a cluster, without necessarily following a predetermined evolutionary logic and going through the phases identified consecutively. Based on the literature review and taking into consideration of most used models of Menzel and Fornahl (2010) and Martin and Sunley (2011) and new insights from path development literature, namely from Harris (2020), CLC identification model was proposed where the division of the Cluster Lifecycle into 4 main phases, defined as emergence stage (path emergence), growth stage (path development), maturity stage (path sustainment), decline stage (path contraction) and renewal stage (path transformation). It was stressed that a cluster does not necessarily pass them in the specified sequence. Nevertheless, each stage of development has its unique characteristics and parameters allowing allocation of clusters to a specific stage by its analysis. Namely the following parameters were identified as defining ones: number of companies and employees, innovation, network, cluster identity/brand, policies and regulations, external markets - exports /FDI.

#### LITERATURE:

1. Belussi, & Caloffi. (2018). The role of leading firms in explaining evolutionary paths of growth: Italian and Turkish clusters on the move. In *Agglomeration and Firm Performance* (pp. 155-188): Springer.
2. Belussi, F. (2018). New perspectives on the evolution of clusters. *European Planning Studies*, 26(9), 1796-1814.
3. Belussi, F., & Sedita, S. R. (2009). Life cycle vs. multiple path dependency in industrial districts. *European Planning Studies*, 17(4), 505-528.
4. Bergman, E. M. (2008). Cluster life-cycles: an emerging synthesis. *Handbook of research on cluster theory*, 1, 114-132.
5. Blažek, J., Květoň, V., Baumgartinger-Seiringer, S., & Tripl, M. (2020). The dark side of regional industrial path development: towards a typology of trajectories of decline. *European Planning Studies*, 28(8), 1455-1473.
6. Boschma, R., & Fornahl, D. (2011). Cluster evolution and a roadmap for future research. *Regional Studies*, 45(10), 1295-1298.
7. Branco, A., & Lopes, J. C. (2013). The economic performance of clustered and non clustered firms along the different phases of the cluster life cycle: the portuguese cork industry case.
8. Brenner, T., & Schlump, C. (2011). Policy measures and their effects in the different phases of the cluster life cycle. *Regional Studies*, 45(10), 1363-1386.
9. Carli, G., & Morrison, A. (2018). On the evolution of the Castel Goffredo hosiery cluster: a life cycle perspective. *European Planning Studies*, 26(5), 915-932.
10. Conz, E., Denicolai, S., & Zucchella, A. (2017). The resilience strategies of SMEs in mature clusters. *Journal of Enterprising Communities: People and Places in the Global Economy*, 11, 186-210. doi:10.1108/JEC-02-2015-0015

11. Cruz, S. C. S., & Teixeira, A. A. C. (2010). The Evolution of the Cluster Literature: Shedding Light on the Regional Studies–Regional Science Debate. *Regional Studies*, 44(9), 1263-1288. doi:10.1080/00343400903234670
12. Davis, C. H., David Arthurs, Erin Cassidy, and David Wolfe. (2006). *A Pragmatic Approach to Innovation Cluster Metrics - OECD*. Paper presented at the Blue Sky II 2006 Conference, Ottawa. <http://www.oecd.org/sti/inno/37443546.pdf>
13. Desmarchelier, B., & Zhang, L. (2018). Innovation networks and cluster dynamics. *The Annals of Regional Science*, 61(3), 553-578.
14. Doloreux, D., & Lord-Tarte, E. (2013). The organisation of innovation in the wine industry. *European Journal of Innovation Management*.
15. Dyba, W., Strykiewicz, T., & De Marchi, V. (2020). Knowledge sourcing and cluster life cycle – a comparative study of furniture clusters in Italy and Poland. *European Planning Studies*, 28(10), 1979-1998. doi:10.1080/09654313.2019.1701996
16. Elola, A., Valdaliso, J. M., Franco, S., & López, S. M. (2017). Public policies and cluster life cycles: insights from the Basque Country experience. *European Planning Studies*, 25(3), 539-556. doi:10.1080/09654313.2016.1248375
17. Elola, A., Valdaliso, J. M., López, S. M., & Aranguren, M. J. (2012). Cluster Life Cycles, Path Dependency and Regional Economic Development: Insights from a Meta-Study on Basque Clusters. *European Planning Studies*, 20(2), 257-279. doi:10.1080/09654313.2012.650902
18. Felzensztein, C., Gimmon, E., & Deans, K. R. (2018). Coopetition in regional clusters: Keep calm and expect unexpected changes. *Industrial Marketing Management*, 69, 116-124. doi: <https://doi.org/10.1016/j.indmarman.2018.01.013>
19. Fornahl, D., Hassink, R., & Menzel, M.-P. (2015). Broadening our knowledge on cluster evolution. In: Taylor & Francis.
20. Handayani, N. U., Cakravastia, A., Diawati, L., & Bahagia, S. N. (2011). A conceptual assessment model to identify phase of industrial cluster life cycle in Indonesia. *Journal of Industrial Engineering and Management (JIEM)*, 5(1), 198-228.
21. Harris, J. L. (2020). Rethinking cluster evolution: Actors, institutional configurations, and new path development. *Progress in Human Geography*, 0309132520926587.
22. Hassink, R., Isaksen, A., & Trippel, M. (2019). Towards a comprehensive understanding of new regional industrial path development. *Regional Studies*, 53(11), 1636-1645.
23. Klepper, S. (1997). Industry life cycles. *Industrial and corporate change*, 6(1), 145-182.
24. Knop, L., Olko, S., & Stachowicz, J. (2011). Crises in the cluster life-cycle. Analysis of the Cases in Poland. *The Economy and Economics After Crisis, Berlin, Berliner Wiss.-Verl*, 467-480.
25. Kowalski, A. M. (2014). The role of innovative clusters in the process of internationalization of firms. *Journal of Economics, Business and Management*, 2(3), 181-185.
26. Lazzeretti, L., Capone, F., Caloffi, A., & Sedita, S. R. (2019). Rethinking clusters. Towards a new research agenda for cluster research. *European Planning Studies*, 27(10), 1879-1903. doi:10.1080/09654313.2019.1650899
27. Levitt, T. (1965). *Exploit the product life cycle* (Vol. 43): Graduate School of Business Administration, Harvard University.
28. Mahroum, S., & Al-Saleh, Y. (2015). The surrogate model of cluster creation: The case of Mubadala in Abu Dhabi. *Science and Public Policy*, 43(1), 1-12.
29. Martin, R. (2009). Rethinking regional path dependence: Beyond lock-in to evolution, The 2009 Roepke lecture in economic geography. In: Papers in evolutionary economic geography.

30. Martin, R., & Sunley, P. (2006). Path dependence and regional economic evolution. *Journal of economic geography*, 6(4), 395-437.
31. Martin, R., & Sunley, P. (2011). Conceptualizing cluster evolution: beyond the life cycle model? *Regional Studies*, 45(10), 1299-1318.
32. Menzel, M.-P., & Fornahl, D. (2010). Cluster life cycles—dimensions and rationales of cluster evolution. *Industrial and corporate change*, 19(1), 205-238.
33. Mobedi, E., & Tanyeri, M. (2019). Comparison of two cluster life stages in a synthetic knowledge base. *European Planning Studies*, 27(9), 1687-1708.
34. O'Connor, S., Doyle, E., & Brosnan, S. (2017). Clustering in Ireland: Development cycle considerations. *Regional Studies, Regional Science*, 4(1), 263-283.
35. Platform, E. C. C. (2021). Success stories. Retrieved from: <https://clustercollaboration.eu/achievements/success-stories>
36. Porter, M. (1998). *The Competitive Advantage: Creating and Sustaining Superior Performance*. NY: Free Press, 1985.(Republished with a new introduction.
37. Porter, M. E. (2000). Location, competition, and economic development: Local clusters in a global economy. *Economic development quarterly*, 14(1), 15-34.
38. Pronești, G. (2019). *Life Cycle of Clusters in Designing Smart Specialization Policies*: Springer.
39. Rodríguez-Rodríguez, G., Morrison, A., & Troncoso-Ojeda, R. (2016). 11 On the emergence and evolution of clusters. *Unfolding cluster evolution*.
40. Sabol, A., Šander, M., & Fučkan, D. (2013). *The concept of industry life cycle and development of business strategies*. Paper presented at the International conference “Active Citizenship by Management, Knowledge Management & Innovation Knowledge and Learning”, Zadar.
41. Santner, D. (2018). Cluster-internal and external drivers of cluster renewal: evidence from two German agricultural engineering case studies. *European Planning Studies*, 26(1), 174-191.
42. Scur, G., & Garcia, R. (2019). The impact of actors, networks and institutions in the cluster's evolution. *Competitiveness Review: An International Business Journal*.
43. Shin, D.-H., & Hassink, R. (2011). Cluster life cycles: the case of the shipbuilding industry cluster in South Korea. *Regional Studies*, 45(10), 1387-1402.
44. Sölvell, Ö. (2009). clusters. *Balancing Evolutionary and Constructive Forces. 2nd Edition. Ivory Tower, Stockholm*.
45. Swann, G. P. (1998). Towards a model of clustering in high-technology industries. *The dynamics of industrial clustering*, 52-76.
46. Tavassoli, & Tsagdis, D. (2014). Critical success factors and cluster evolution: A case study of the Linköping ICT cluster lifecycle. *Environment and Planning A*, 46(6), 1425-1444.
47. Ter Wal, A. L., & Boschma, R. (2011). Co-evolution of firms, industries and networks in space. *Regional Studies*, 45(7), 919-933.
48. Tichy, G. (1998). Clusters: less dispensable and more risky than ever. *Clusters and regional specialization*, 1, 211-225.
49. Trippl, M., Grillitsch, M., Isaksen, A., & Sinozic, T. (2015). Perspectives on cluster evolution: critical review and future research issues. *European Planning Studies*, 23(10), 2028-2044.
50. Van Klink, A., & De Langen, P. (2001). Cycles in industrial clusters: the case of the shipbuilding industry in the Northern Netherlands. *Tijdschrift voor economische en sociale geografie*, 92(4), 449-463.
51. Vanthillo, T., Cant, J., Vanelslender, T., & Verhetsel, A. (2018). Understanding evolution in the Antwerp chemical cluster: the role of regional development strategies. *European Planning Studies*, 26(8), 1519-1536.

52. Viederytė, R. (2018). CLUSTER LIFE CYCLES: TYPES AND DRIVING FACTORS. *Regional Formation and Development Studies*, 24(1), 62-72.
53. Wolter, K. (2003). *A life cycle for clusters? The dynamics governing regional agglomerations*. Paper presented at the Proceedings of the Conference on Clusters, Industrial Districts and Firms: the Challenge of Globalization.

## WHAT LEADS TO BRAND HATE? ANTECEDENTS AND OUTCOMES OF BRAND HATE

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### ABSTRACT

*The purpose of this study is to investigate the concepts of brand hate. It presents the antecedents and outcomes of brand hate. The study demonstrates five components namely corporate social responsibility (CSR), product/service failures (FAL), negative past experience (NPE), symbolic incongruity (SIC), and ideological incompatibility (IDC) to trigger brand hate, which leads to two behavioral outcomes namely brand avoidance (BAV) and negative word of mouth (NWM). The study shows that corporate social responsibility (CSR) is negatively related to brand hate. Four components Product/Service failures, Negative past experience, Symbolic incongruity, and Ideological incompatibility are positively related to brand hate. Brand hate is positively related to two outcome variables Brand avoidance and Negative word of mouth. Prior studies have focused either on antecedents or the outcomes of negative feelings but do not include a comprehensive model that addresses these issues. The population of this study comprises individual living in three large cities of Pakistan. The data will be collected using survey questionnaire based on convenience sampling approach. Smart PLS software will be used to data analyse.*

**Keywords:** Brand hate, Corporate social responsibility, Brand avoidance, Negative word of mouth, Symbolic incongruity, Ideological incompatibility

### 1. INTRODUCTION

Consumers are considerably different in their associations with brands (Alvarez & Fournier, 2016). Although some people love certain brands, several are neutral to them, and even some have hatred for such brands (Khan & Lee, 2014; S. Rahi & M. A. Ghani, 2016). Prior studies conduct by Rahi (2015); Romani et al. (2012), brand research has provided scant information on the negative emotional states that consumers experience in relation to brands. In a similar way, Fetscherin and Heinrich (2015) say that specifically extreme negative emotions or the ‘dark-side’ of consumer-brand relationships need further investigations. The purpose of this research is to examine the essence of brand hatred, as well as the antecedents, the outcomes of brand hate and to examine how to repel and eliminate brands-hatred. What feelings do customers have when users encounter brands hatred? There're several variables that play an important role to define brand hatred. These various factors include but aren't limited to Product/Service failures, Negative past experience, Symbolic incongruity, and Ideological incompatibility. All of the above-listed considerations are positively related to brand hate. Corporate social responsibility is negatively related to brand hate while brand hate is positively related to outcome variables.

Hate has become a complicated feeling that can vary from simplistic distancing or devaluation of the hatred object or entity to extreme anger (S Rahi et al., 2017; Sternberg, 2003). When customers are dissatisfied with brands, they express bad feelings including hate (Kucuk, 2018; Rahi, 2016b). Bad feelings towards the brand have been conceived as brand hate, and it is described as a mental condition where a customer develops extreme unpleasant feelings and hate towards that brand, hate that expresses through its anti-branding practices (Kucuk, 2016a; S. Rahi & M. Ghani, 2016). Presently, digitally-driven customers will effectively articulate their emotions by creating copies of the pictures and logos utilized by their business rivals, which could be utilized as an illustration of behavioral brands' hatred (Kucuk, 2018; Rahi, 2016a). This paper has been investigated and outlined the conceptual and empirical factors and outcomes of brands' hatred. It also has a valuable categorization of brands' hatred.

## 2. LITERATURE REVIEW

### 2.1. Corporate social responsibility

Corporate social responsibility (CSR) encourages incorporating all corporate shareholders, all individual entities, and the health of the natural surroundings into an organization's management strategy (Kucuk, 2018; Rahi, Othman Mansour, et al., 2021). Therefore, a corporation's proactive and moral business practices affect customer recognition with the organization (Bhattacharya & Sen, 2003; Sen; & Bhattacharya, 2001), customer preferences towards that commodity (Berenss et al., 2005; Rahi, Ammara, et al., 2021), and customer loyalty (Luo' & Bhattacharya, 2006; Rahi, Othman Mansour Majeed, et al., 2019). According to these studies, CSR will help businesses to increase their profits (Du et al., 2010). In psychological research, hate has been discussed in terms of moral judgement and moral rejection (Opotow, 1990, 2005). Hate creates moral rejection, in which the despised person has been treated as cruel, immoral, or non-existent, whereas ethically involved entities deserve equal consideration (Deutsch, 1986; Rahi, Abd.Ghani, et al., 2019; Staub, 1990). When a brand doesn't behave responsibly, it must be kept complicit and liable towards their acts, that is usually discouraged, resulting in unfavorable brand-value (Lee et al., 2009) and customer anti-brandings practices (Krishnamurthy & Kucuk, 2009; Rahi et al.). Moral issues have the main factor why certain brands are avoided by customers (Lee et al., 2009). This study suggests that the evasion of moral brands relies on social problems related to immoral corporate practices. Likewise, several studies suggest that luxurious products might have been hated through low societal success in companies (Bryson et al., 2013). Therefore, incompetence would results in demonstrations and brands hatred if a business/brands fail in societal affairs. Thus, CSR is hypothesised as:

- **H1:** *Corporate social responsibility is negatively related to brand hate.*

### 2.2. Product/Service failures

Customers in digital marketing have been considered as collaborators and not the inactive of products and services recipients (Rahi & Abd. Ghani, 2018; Rahi, Ghani, et al., 2020; Rahi, Khan, et al., 2020b). Therefore customer satisfactions takes precedence (Rahi & Abd. Ghani, 2019a; Rahi, Ghani, & Ngah, 2018; Samar Rahi et al., 2017; Ward & Ostrom, 2006). Numerous customers dissatisfied with service-delays and items that do not work properly consider it convenient to speak up and report via web-based customer complaints (Lee & Cude, 2012; Rahi & Abd. Ghani, 2019c; Rahi, Ghani, Alnaser, et al., 2018). The online demonstration of customer grievances and disappointments may hit levels that will affect the potential stock market returns of certain companies (Luo, 2007). Moreover, the service failure will result in significant customer dissatisfaction, retaliation, and hatred (Kucuk, 2018; Rahi & Abd.Ghani, 2019). Customers could protest openly and vehemently on digital platforms causing harm to a brand's logos and deliberately violating business policy (Grégoire et al., 2009; Tripp & Grégoire, 2011).

Kucuk (2016a) discovered that almost all user complaints websites disappeared within a few years. Customers that experience massive service and product failures, on the other hand, could still effectively build brands resistance and sow increased frustration and brands hatred in a wider public (Grégoire et al., 2010; Samar & Mazuri, 2019; Ward & Ostrom, 2006). Therefore, electronic complaints sites effectively expose customer anger with products. Thus, we advance the following hypothesis:

- **H2:** *Product/Service failures is positively related to brand hate.*

### 2.3. Negative past experience

Product-related indicators primarily contribute to the customer's unfavourable prior experiences with the brands' (Hegner et al., 2017). Negative dissonance happens if legitimate achievement falls short of expectations, that almost often leads to frustration (Oliver, 1980). The difference though between product hate and brand hate is that a negative experience with a certain product of a brand affects attitudes toward other products from the same brand name, and, thus, hate gets generalized on a brand level (Kucuk, 2018). In the field of luxurious products, Bryson et al. (2013) describe customer frustration as the best indicator of brands hate. Furthermore, Zarantonello et al. (2016) describe breach of expectations as a significant variable contributing to brands hate. Thus, we advance the following hypothesis:

- **H3:** *Negative past experience is positively related to brand hate.*

### 2.4. Symbolic incongruity

Market-related considerations are often concerned about symbolic incongruity with the brands, where a brands portrays an undesirable appearance to the users (Kucuk, 2018). According to Khan and Lee (2014), consumers have the tendency to buy those brands with images congruent to their self-concepts or those that will give desired meaning to their lives. Zarantonello et al. (2016) refers to this class as the flavor mechanism and describe as a potential predictor of brands hate. Thus, incongruity among the brand's symbolic associations and the user's self-worth can contribute to negative feelings towards the brands (Kucuk, 2018). The undesirable selves appear to be the most suited to brands' hate between the activities on the self-image (Ogilvie, 1987). According to Lee et al. (2009), disidentification theory suggests that people may develop their self-concept by disidentifying with brands that are perceived to be inconsistent with their own image. Thus, we hypothesized trust as:

- **H4:** *Symbolic incongruity is positively related to brand hate.*

### 2.5. Ideological incompatibility

According to Kucuk (2018), situational aspects related to ideological incompatibility customers view focusing on constitutional, societal, or ethical business misconduct resulting in negative sentiments against the company. We describe the ideological incompatibility as the word ideology applies to a number of views incompatible with the user (Kucuk, 2018; Rahi, 2018; Rahi, Khan, et al., 2020a). The earlier study have shown that customers dislike products that violate civil-rights or harm the climate and, they even condemn brands which partake in immoral corporate tactics (Friedman, 1985; Rahi & Abd. Ghani, 2019b; S. Samar et al., 2017; Sandıkcı & Ekici, 2009). In this regard, when the brands are accused of organizational carelessness users experience an ideological incompatibility with that brands due to ethical, religious, or societal considerations (Lee et al., 2009; Zarantonello et al., 2016). Thus, we proposed following hypothesis:

- **H5:** *Ideological incompatibility is positively related to brand hate.*



## 2.6. Brand hate

Authors like Fehr and Russell (1984) explore the fundamental scale of emotional expressions by requesting participants to identify sentiment models. They considered hate to be the second most powerful emotion after love. According to psychological research, emotions have been related to contextual experiences and behavior's (Rahi & Ghani, 2018a; Shaver et al., 1987). Previous studies have found that relative bonding in customer brand associations is dictated by how consumers personally react to products and how to connect and think towards the brands (Monga, 2002). According to Sternberg (1986), intimacy, the emotional basis of love relations, refers to feelings of closeness, connectedness, and bondedness. According to Lee et al. (2009), brands avoidance is a phenomenon whereby consumers deliberately choose to keep away from or reject a brand. The degree to which a person talks or communicates negatively about brands has been referred to as negative word of mouth (Bonifield & Cole, 2007). According to Baumeister et al. (2001), people are more likely to share negative experiences with others than they are likely to share an equally positive experience. Customers who engage in negative word of mouth always seek to inform people of the bad experiences towards the brands (Singh, 1988). Thus, we proposed following hypothesis:

- **H6:** Brand hate is positively related to brand avoidance.
- **H7:** Brand hate is positively related to negative word of mouth.

## 2.7. Research model

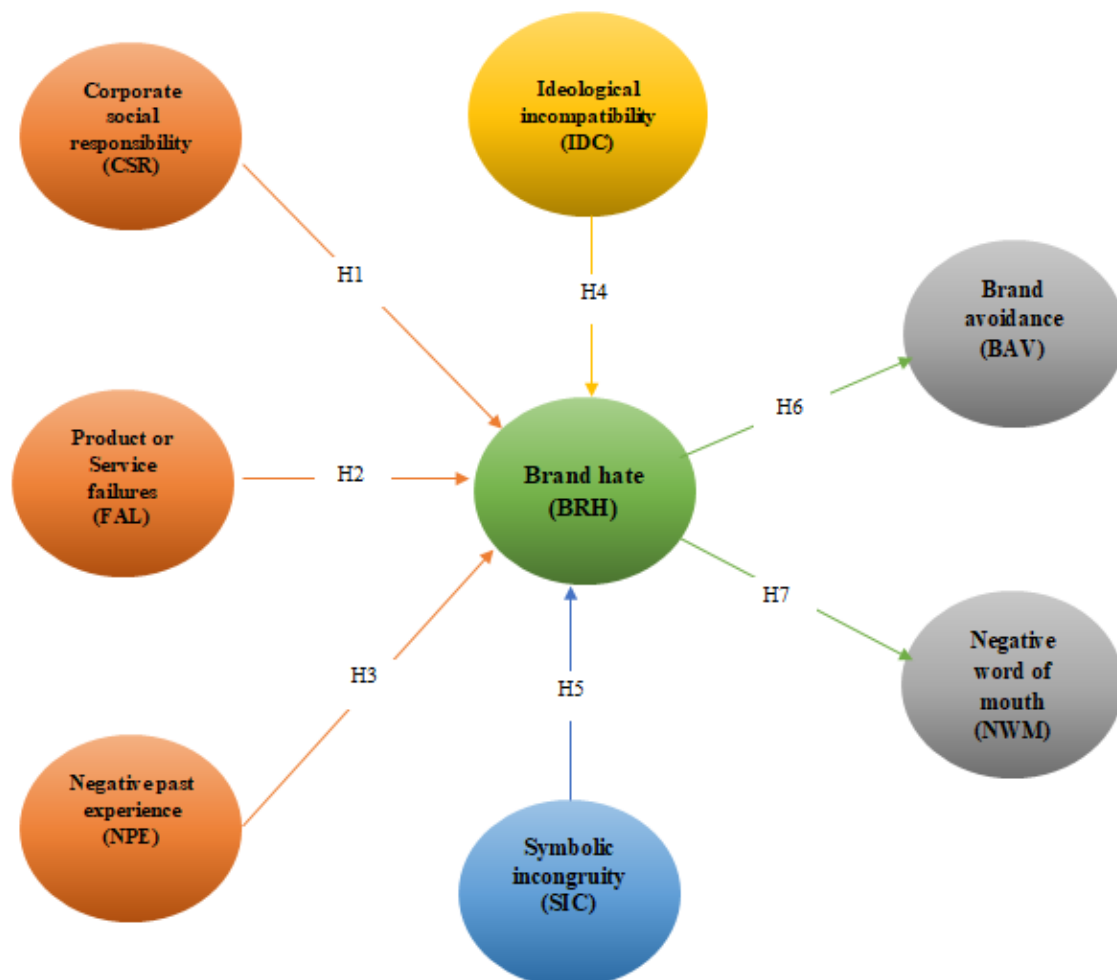


Figure 1: The proposed research framework

### **3. RESEARCH METHOD**

#### **3.1. Research Paradigm**

The scientific perspectives of researchers are referred to as research paradigms (Rahi, 2017). There are the rules and arrangements that control how and when to address experimental problems and conduct research (Creswell, 2003; Rahi, Alnaser, et al., 2019). Such paradigms are fundamental research concepts on how to proceed with the research (Rahi & Ghani, 2018b; Samar Rahi, 2017). The positivist approach would be followed in this research (R. Samar et al., 2017). The paradigm proponents claim that knowledge can be obtained through observations and experiments (Rahi & Ghani, 2018b; Samar Rahi, 2017). In natural sciences the positivism paradigm could be adequately used (Hirschheim, 1985).

#### **3.2. Study Level**

This research takes a deductive approach since we all get a theories formulated by researchers so we're not introducing any different idea; instead, we will examining the theories and models by acquiring additional responses from participants and observing the results using numerous statistical tests (Samar Rahi, 2017).

#### **3.3. Research Methods**

##### *3.3.1. Qualitative Method*

The qualitative approach, even as title implies would be concerned with accuracy and can be intended to gather rigorously information on a specific study topic (Samar Rahi, 2017). According to Lune and Bergg (2017), this category encompasses a participant's thoughts and desires when contrasted to quantitative approaches. We are replacing the current concept in this research but evaluate consensus view with some statistical tests such that this approach is not suggested for this study.

##### *3.3.2. Quantitative Method*

According to Grinnell, Jr and Unrau. (2010), Quantitative methods are a scientific technique employed to quantitatively classify findings through statistics and to identify their bases of positivity and the Interpretivists are mainly using this method. Unlike qualitative approaches, this technique relies on gathering new information from a wider demographic in response to a situation and analysing the data, but it ignores a person's thoughts and perceptions as well as consistency issues (Bell; & Bryman', 2007; Rahi & Ahmad, 2020).

##### *3.3.3. Methodological approach taken*

For this analysis a quantitative approach is used as the research has not been inducting new theory rather dealing and examining an existing theory by applying new statistical tools.

#### **3.4. Research type**

The positivist paradigm will be used in this study. For this analysis, a quantitative approach will be used, as the research does not lead to a fresh concept and testing an established assertion with the use of new sampling techniques. Empirical data analysis will be required for a quantitative study (Rahi & Ishaq, 2020). The corporate social responsibility and numerous assumptions will be evaluated using structural equation modeling. Structural equation modeling (SEM) is a computational method for evaluating and predicting cause-effect relationships through combining statistical evidence with qualitative causation hypotheses (Samar Rahi, 2017). Because of the explorative aspect of our study, we will select partial least squares structural equation modeling (PLS-SEM) to perform our statistical research (Shiau et al., 2019). We will use the SmartPLS software to analyse data using the standardized PLS-SEM technique (Dijkstra & Henseler, 2015; Hooi et al., 2018).

Path analysis will be employed to evaluate the hypothesis produced by the conceptual framework. Five parameters will be used to assess convergent validity factor loadings: Cronbach's alpha, composite reliability (CR), average variance extracted (AVE), and variance inflation factor (VIF) .

### 3.5. Research Design

The term research strategy refers to a structured compilation and assessment of information, as well as the structured description of that statistics. The researcher then employed the technique for analysis outlined herein for this specific study. Initially, a field of concern for the study will be chosen and then a subject that will require further investigation in detail will be picked. A thorough study of the research articles will be conducted. A wide range of experiments will be performed to analyse the effect of these factors. When the survey will be done, the data will be analysed in line with the research problem and the research's objective, accompanied by a description of the findings obtained from the data using analytical methods. Besides that, the research's results and conclusions will be discussed on a higher stage and suggestions, and guidelines will be made. Afterward, the research will yield a conclusion. After that, a checklist of sources will be created to support the topics provided in the study.

### 3.6. Population and sampling

It indicates people, items and/or organizations researcher want to apply our study and the results of the study is the population of the study and The representative part of the population is known to be the sample (Samar Rahi, 2017). Since we could not analyse almost every demographic owing to time limits, we will choose a specific subset of the demographic to review. A specific subset of a population will assume information as to the large subset or remainder population (Malhotra & Birks, 2007).

#### 3.6.1. Population of study

The study's populations consists of users living in various cities in Pakistan.

#### 3.6.2. Sampling Technique applied

The process of the sample determines the sampling procedure required (Samar Rahi, 2017). In this analysis, the convenience sampling technique will be used, that has been a kind of non-probability sampling method . Convenience sampling is a method of collecting information about a population which has been closer by and readily available to the scientist. Convenience sampling helps researchers to collect responses timely.

### LITERATURE:

1. Alvarez, C., & Fournier, S. (2016). Consumers' relationships with brands. *Current Opinion in Psychology*, 10, 129-135.
2. Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. *Review of general psychology*, 5(4), 323-370.
3. Bell, E., & Bryman, A. (2007). The ethics of management research: an exploratory content analysis. *British journal of management*, 18(1), 63-77.
4. Berenss, G., Van Riel, C. B., & Van Bruggen, G. H. (2005). Corporate associations and consumer product responses: The moderating role of corporate brand dominance. *Journal of marketing*, 69(3), 35-48.
5. Bhattacharya, C. B., & Sen, S. (2003). Consumer-company identification: A framework for understanding consumers' relationships with companies. *Journal of marketing*, 67(2), 76-88.

6. Bonifield, C., & Cole, C. (2007). Affective responses to service failure: Anger, regret, and retaliatory versus conciliatory responses. *Marketing Letters*, 18(1), 85-99.
7. Bryson, D., Atwal, G., & Hultén, P. (2013). Towards the conceptualisation of the antecedents of extreme negative affect towards luxury brands. *Qualitative Market Research: An International Journal*.
8. Creswell, J. W. (2003). *Research design*. Sage publications Thousand Oaks, CA.
9. Deutsch, M. (1986). Cooperation, conflict, and justice. In *Justice in social relations* (pp. 3-18). Springer.
10. Dijkstra, T. K., & Henseler, J. (2015). Consistent partial least squares path modeling. *MIS Quarterly*, 39(2), 297-316.
11. Du, S., Bhattacharya, C. B., & Sen, S. (2010). Maximizing business returns to corporate social responsibility (CSR): The role of CSR communication. *International journal of management reviews*, 12(1), 8-19.
12. Fehr, B., & Russell, J. A. (1984). Concept of emotion viewed from a prototype perspective. *Journal of experimental psychology: General*, 113(3), 464.
13. Fetscherin, M., & Heinrich, D. (2015). Consumer brand relationships research: A bibliometric citation meta-analysis. *Journal of Business Research*, 68(2), 380-390.
14. Friedman, M. (1985). Consumer boycotts in the United States, 1970–1980: Contemporary events in historical perspective. *Journal of consumer affairs*, 19(1), 96-117.
15. Grégoire, Y., Laufer, D., & Tripp, T. M. (2010). A comprehensive model of customer direct and indirect revenge: Understanding the effects of perceived greed and customer power. *Journal of the Academy of Marketing Science*, 38(6), 738-758.
16. Grégoire, Y., Tripp, T. M., & Legoux, R. (2009). When customer love turns into lasting hate: The effects of relationship strength and time on customer revenge and avoidance. *Journal of marketing*, 73(6), 18-32.
17. Grinnell, Jr, R. M., & Unrau, Y. A. (2010). *Social work research and evaluation: Foundations of evidence-based practice*. Oxford University Press.
18. Hegner, S. M., Fetscherin, M., & Van Delzen, M. (2017). Determinants and outcomes of brand hate. *Journal of Product & Brand Management*.
19. Hirschheim, R. (1985). INFORMATION SYSTEMS EPISTEMOLOGY: AN HISTORICAL PERSPECTIVE.
20. Hooi, T. K., Abu, N. H. B., & Rahim, M. (2018). Relationship of big data analytics capability and product innovation performance using smartPLS 3.2. 6: Hierarchical component modelling in PLS-SEM. *Int. J. Supply Chain Manag*, 7, 51.
21. Khan, M. A., & Lee, M. S. (2014). Prepurchase determinants of brand avoidance: The moderating role of country-of-origin familiarity. *Journal of Global Marketing*, 27(5), 329-343.
22. Krishnamurthy, S., & Kucuk, S. U. (2009). Anti-branding on the internet. *Journal of Business Research*, 62(11), 1119-1126.
23. Kucuk, S. U. (2016a). Negative double jeopardy revisited: A longitudinal analysis. *Journal of Brand Management*, 18(2), 150-158.
24. Kucuk, S. U. (2018). Macro-level antecedents of consumer brand hate. *Journal of Consumer Marketing*.
25. Lee, M. S., Motion, J., & Conroy, D. (2009). Anti-consumption and brand avoidance. *Journal of Business Research*, 62(2), 169-180.
26. Lee, S., & Cude, B. J. (2012). Consumer complaint channel choice in online and offline purchases. *International Journal of Consumer Studies*, 36(1), 90-96.
27. Lune, H., & Bergg, B. L. (2017). *Qualitative research methods for the social sciences*. Pearson.

28. Luo, X., & Bhattacharya, C. B. (2006). Corporate social responsibility, customer satisfaction, and market value. *Journal of marketing*, 70(4), 1-18.
29. Luo, X. (2007). Consumer negative voice and firm-idiosyncratic stock returns. *Journal of marketing*, 71(3), 75-88.
30. Malhotra, N. K., & Birks, D. F. (2007). *Marketing Research: An Applied Approach* Pearson Education. In: Limited.
31. Monga, A. B. (2002). Brand as a relationship partner: Gender differences in perspectives. *ACR North American Advances*.
32. Ogilvie, D. M. (1987). The undesired self: a neglected variable in personality research. *Journal of personality and social psychology*, 52(2), 379.
33. Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of marketing research*, 17(4), 460-469.
34. Opatow, S. (1990). Moral exclusion and injustice: An introduction. In: Wiley Online Library.
35. Opatow, S. (2005). Hate, Conflict, and Moral Exclusion.
36. Rahi, S. (2015). Moderating role of brand image with relation to internet banking and customer loyalty: a case of branchless banking. *The Journal of Internet Banking and Commerce*, 20(3).
37. Rahi, S. (2016a). Impact of Customer Perceived Value and Customers Perception of Public Relation on Customer Loyalty with Moderating Role of Brand Image. *The Journal of Internet Banking and Commerce*, 21(2), ---.
38. Rahi, S. (2016b). Impact of Customer Value, Public Relations Perception and Brand Image on Customer Loyalty in Services Sector of Pakistan. *Arabian J Bus Manag Review* S2, 004.
39. Rahi, S. (2017). Research design and methods: A systematic review of research paradigms, sampling issues and instruments development. *International Journal of Economics & Management Sciences*, 6(2), 1-5.
40. Rahi, S. (2018). Examining the Effects of Travel Constraints, Tourist Satisfaction and Website Image on Tourist Loyalty in Developing Countries Context. *Economic and Social Development: Book of Proceedings*, 478-487.
41. Rahi, S., & Abd. Ghani, M. (2018). The role of UTAUT, DOI, perceived technology security and game elements in internet banking adoption. *World Journal of Science, Technology and Sustainable Development*, 15(4), 338-356.  
<https://doi.org/doi:10.1108/WJSTSD-05-2018-0040>
42. Rahi, S., & Abd. Ghani, M. (2019a). Does gamified elements influence on user's intention to adopt and intention to recommend internet banking? *International Journal of Information and Learning Technology*, 36(1), 2-20. <https://doi.org/doi:10.1108/IJILT-05-2018-0045>
43. Rahi, S., & Abd. Ghani, M. (2019b). Integration of expectation confirmation theory and self-determination theory in internet banking continuance intention. *Journal of Science and Technology Policy Management*, 10(3), 533-550. <https://doi.org/10.1108/jstpm-06-2018-0057>
44. Rahi, S., & Abd. Ghani, M. (2019c). Investigating the role of UTAUT and e-service quality in internet banking adoption setting. *The TQM Journal*, 31(3), 491-506.
45. Rahi, S., & Abd. Ghani, M. (2019). Integration of DeLone and McLean and self-determination theory in internet banking continuance intention context. *International Journal of Accounting & Information Management*, 27(3), 512-528.  
<https://doi.org/10.1108/ijaim-07-2018-0077>
46. Rahi, S., Abd. Ghani, M., & Hafaz Ngah, A. (2019). Integration of unified theory of acceptance and use of technology in internet banking adoption setting: Evidence from Pakistan. *Technology in Society*, 58, 101120.  
<https://doi.org/https://doi.org/10.1016/j.techsoc.2019.03.003>

47. Rahi, S., & Ahmad, S. (2020). Investigating the role of employee readiness to change on effective organizational change implementation: a theoretical perspective. *Economic and Social Development (Book of Proceedings)*, 52nd International Scientific Conference on Economic and Social Development,
48. Rahi, S., Alnaser, F. M., & Ghani, M. A. (2019). Designing Survey Research: Recommendation for Questionnaire Development, Calculating Sample Size and Selecting Research Paradigms. *Economic and Social Development: Book of Proceedings*, 1157-1169.
49. Rahi, S., Ammara, U. E., & Qazi, T. F. (2021). THE IMPACT OF ADVERTISEMENT ON CUSTOMER LOYALTY WITH MEDIATING ROLE OF WORD OF MOUTH (WOM). *Economic and Social Development: Book of Proceedings*, 224-229.
50. Rahi, S., & Ghani, M. (2016). Internet Banking, Customer Perceived Value and Loyalty: The Role of Switching Costs. *J Account Mark*, 5(4), 188. <https://doi.org/10.4172/2168-9601.1000188>
51. Rahi, S., Ghani, M., Alnaser, F., & Ngah, A. (2018). Investigating the role of unified theory of acceptance and use of technology (UTAUT) in internet banking adoption context. *Management Science Letters*, 8(3), 173-186.
52. Rahi, S., Ghani, M., & Muhamad, F. (2017). Inspecting the Role of Intention to Trust and Online Purchase in Developing Countries. *J Socialomics* 6(1). <https://doi.org/10.4172/2167-0358.1000191>
53. Rahi, S., Ghani, M., & Ngah, A. (2018). A structural equation model for evaluating user's intention to adopt internet banking and intention to recommend technology. *Accounting*, 4(4), 139-152.
54. Rahi, S., & Ghani, M. A. (2016). Customer's Perception of Public Relation in E-Commerce and its Impact on E-Loyalty with Brand Image and Switching Cost. *Journal of Internet Banking and Commerce*, 21(3).
55. Rahi, S., & Ghani, M. A. (2018a). Investigating the Role of E-Service Quality and Brand Image in Internet Banking Acceptance Context with Structural Equation Modeling (SEM-PLS). *Economic and Social Development (Book of Proceedings)*, 30th International Scientific Conference on Economic and Social,
56. Rahi, S., & Ghani, M. A. (2018b). A Structural Equation Modeling (SEM-AMOS) for Investigating Brand Loyalty and Customer's Intention towards Adoption of Internet Banking *Economic and Social Development (Book of Proceedings)*, 29th International Scientific Conference on Economic and Social,
57. Rahi, S., Ghani, M. A., & Alnaser, F. M. (2017). The Influence of E-Customer Services and Perceived Value on Brand Loyalty of Banks and Internet Banking Adoption: A Structural Equation Model (SEM). *The Journal of Internet Banking and Commerce*, 22(1), 1-18.
58. Rahi, S., Ghani, M. A., & Ngah, A. H. (2020). Factors propelling the adoption of internet banking: the role of e-customer service, website design, brand image and customer satisfaction. *International Journal of Business Information Systems*, 33(4), 549-569. <https://doi.org/10.1504/ijbis.2020.105870>
59. Rahi, S., & Ishaq, M. (2020). Factors Influencing online Shopping behavior With Mediating Role of Customer Perceived Value. *Economic and Social Development: Book of Proceedings*,
60. Rahi, S., Ishtiaq, M., Farooq, W., & Alnaser, F. EXAMINING FACTORS INFLUENCE INDIVIDUAL BEHAVIOUR TO CONTINUE USE OF MOBILE SHOPPING APPS WITH THE INTEGRATION OF TECHNOLOGY ACCEPTANCE MODEL AND BRAND AWARENESS. *Economic and Social Development (Book of Proceedings)*, 7th ITEM Conference-" Innovation, Technology, Education and,

61. Rahi, S., Khan, M. M., & Alghizzawi, M. (2020a). Extension of technology continuance theory (TCT) with task technology fit (TTF) in the context of Internet banking user continuance intention. *International Journal of Quality & Reliability Management*, 38(4), 986-1004. <https://doi.org/10.1108/ijqrm-03-2020-0074>
62. Rahi, S., Khan, M. M., & Alghizzawi, M. (2020b). Factors influencing the adoption of telemedicine health services during COVID-19 pandemic crisis: an integrative research model. *Enterprise Information Systems*, 1-25. <https://doi.org/10.1080/17517575.2020.1850872>
63. Rahi, S., Othman Mansour Majeed, M., Alghizzawi, M., & Alnaser Feras, M. (2019). Integration of UTAUT model in internet banking adoption context: The mediating role of performance expectancy and effort expectancy. *Journal of Research in Interactive Marketing*, 13(3), 411-435. <https://doi.org/10.1108/jrim-02-2018-0032>
64. Rahi, S., Othman Mansour, M. M., Alharafsheh, M., & Alghizzawi, M. (2021). The post-adoption behavior of internet banking users through the eyes of self-determination theory and expectation confirmation model. *Journal of Enterprise Information Management*, ahead-of-print(ahead-of-print). <https://doi.org/10.1108/jeim-04-2020-0156>
65. Romani, S., Grappi, S., & Dalli, D. (2012). Emotions that drive consumers away from brands: Measuring negative emotions toward brands and their behavioral effects. *International Journal of Research in Marketing*, 29(1), 55-67.
66. Samar, R., & Mazuri, A. G. (2019). Does gamified elements influence on user's intention to adopt internet banking with integration of UTAUT and general self-confidence? *International Journal of Business Excellence*, 19(3), 394-414.
67. Samar, R., Norjaya, M. Y., & Feras, M. A. (2017). Measuring the role of website design, assurance, customer service and brand image towards customer loyalty and intention to adopt internet banking. *The Journal of Internet Banking and Commerce*, 22(S8).
68. Samar Rahi. (2017). Research design and methods: A systematic review of research paradigms, sampling issues and instruments development. *International Journal of Economics & Management Sciences*, 6(2), 1-5.
69. Samar, S., Ghani, M., & Alnaser, F. (2017). Predicting customer's intentions to use internet banking: the role of technology acceptance model (TAM) in e-banking. *Management Science Letters*, 7(11), 513-524.
70. Sandıkcı, Ö., & Ekici, A. (2009). Politically motivated brand rejection. *Journal of Business Research*, 62(2), 208-217.
71. Sen, S., & Bhattacharya, C. B. (2001). Does doing good always lead to doing better? Consumer reactions to corporate social responsibility. *Journal of marketing research*, 38(2), 225-243.
72. Shaver, P., Schwartz, J., Kirson, D., & O'Connor, C. (1987). Emotion knowledge: further exploration of a prototype approach. *Journal of personality and social psychology*, 52(6), 1061.
73. Shiau, W.-L., Sarstedt, M., & Hair, J. F. (2019). Internet research using partial least squares structural equation modeling (PLS-SEM). *Internet Research*, 29(3), 398-406. <https://doi.org/10.1108/IntR-10-2018-0447>
74. Singh, J. (1988). Consumer complaint intentions and behavior: definitional and taxonomical issues. *Journal of marketing*, 52(1), 93-107.
75. Staub, E. (1990). Moral exclusion, personal goal theory, and extreme destructiveness. *Journal of Social Issues*, 46(1), 47-64.
76. Sternberg, R. J. (1986). A triangular theory of love. *Psychological review*, 93(2), 119.
77. Sternberg, R. J. (2003). A duplex theory of hate: Development and application to terrorism, massacres, and genocide. *Review of general psychology*, 7(3), 299-328.

78. Tripp, T. M., & Grégoire, Y. (2011). When unhappy customers strike back on the Internet. *MIT Sloan Management Review*, 52(3), 37-44.
79. Ward, J. C., & Ostrom, A. L. (2006). Complaining to the masses: The role of protest framing in customer-created complaint web sites. *Journal of Consumer Research*, 33(2), 220-230.
80. Zarantonello, L., Romani, S., Grappi, S., & Bagozzi, R. P. (2016). Brand hate. *Journal of Product & Brand Management*.



# **A PROPOSAL TO USE BLOCKCHAIN TECHNOLOGY IN INNOVATION ECOSYSTEMS FOR SUSTAINABLE PURCHASES THROUGH THE PERCEPTION OF PUBLIC MANAGERS**

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## **ABSTRACT**

*The success of organizational processes is increasingly related to sustainable innovation. The concern with sustainable public purchases has been gaining strength over the years. However, several barriers are found to implement this practice. The lack of transparency, traceability, trust and ethics, corruption, centralization of information, too much bureaucracy, among other problems, make it difficult to achieve social objectives through government acquisitions. At the same time, blockchain advances as technology part of the innovation of industry 4.0 and as a proposal to solve these difficulties. The aim of the study was to identify the perception of public procurement managers on the use of information systems with characteristic features of this technology, in order to reduce these barriers and elaborate a proposal for the use of blockchain in open innovation systems. The research developed is qualitative, quantitative, and applied, being carried out through the application of a structured questionnaire to purchasing managers using the 92 prefectures of the State of Rio de Janeiro, located in Brazil, with subsequent analysis through descriptive statistics. The results of this work present relevant findings for public procurement through innovation and blockchain technology with the possibility of tracking the entire supply chain, allowing the verification of possible environmental and social damages such as the use of child or slave labor, the use of deforestation wood, counterfeit products, unethical agents, in addition to providing more transparency to the process of acquisition. The resulting proposal could facilitate sustainable acquisitions and serve as a guide for government managers to go beyond economic interests.*

**Keywords:** *sustainable procurement, public sector, blockchain, smart contract, innovation 4.0*

## **1. INTRODUCTION**

The activities of public institutions are considered essential to leverage and maintain the reduction of the environmental impact on the economy, participating directly in the balance of the market and operating both as a consumer and as an intermediary agent (TESTA et al., 2016). Governments' purchasing power is increasingly used as a strategic tool to achieve broader objectives such as promoting innovation, sustainability, social inclusion and supporting small and medium-sized enterprises (OECD, 2019). In some countries, public works financed by the government have been used as a social policy against unemployment (MCCRUDEN, 2004).

In South Africa, after Apartheid, public procurement had already been seen as an important lever for social political actions. Research shows that through public acquisitions it is possible to achieve consistent results in society and that public agencies are encouraged to acquire sustainably (BRAMMER AND WALKER, 2011). Insofar as the world population is becoming more aware of the powerful influence of production and consumption on the environment, economy and society, sustainable development becomes progressively more relevant (ROMAN, 2017). The increase in this awareness of environmental depletion has also driven innovation towards sustainability in the technological and consumer domains, resulting, among others, in eco-innovations with positive impacts at various levels in society (COSTA & MATIAS, 2020). The demands of the general population and governments on sustainability in the supply chain motivate investigations of how blockchain technology can solve problems and help achieve sustainable goals (SABERI et al., 2018). Nowadays, consumers demand sustainability requirements and traditional models of price competition are insufficient (COSTA & MATIAS, 2020). This technology is seen as one of the trends that will influence business and society in the coming years (ØLNES et al., 2017), and has the potential to provide benefits to the government and society in addition to presenting the next step in the development of electronic government, allowing to reduce costs, share reliable processes and improve auditing (PALFREYMAN, 2015). Very recently, the potential impact of blockchain technology applied to the public sector has started to be recognized by governments and suppliers in the sector (HYVARINEN et al., 2017). The OECD created the Global Blockchain Policy Forum, the main international event that aims to bring together ministers of state, academics, policy makers and other stakeholders to discuss the main issues and applications of this technology (OECD, 2019). The State Administration of Taxation (AET) of Beijing in China recently announced the implementation of an application for issuing electronic invoices by the blockchain (AET, 2020). The basic benefits of blockchain allow for data integrity and irrefutable transactions, which can result in tracking and transparency that support the reduction of corruption and fraud (ØLNES et al., 2017). The blockchain supports the transparency that has become essential to rebuild trust (DENNY et al., 2017), and can be considered a sustainable measure against corruption.

## **2. LITERATURE REVISION**

It's been sought first to understand what was produced on the themes, through a systematic review of the literature, following the steps and recommendations suggested by Cauchick-Miguel et al. (2017): selection of sources, access to databases, adoption of keywords, use of eventual search filters, reading the title, reading the summary, downloading the articles resulting from the search, reading the articles, archiving and searching for the next article.

### **2.1. Sustainable public procurement**

Public contracts refer to acquisitions made by governmental organizations or the public sector, being a policy with multiple objectives, mainly the guarantee of quality of services and responsible consumption (WALKER AND BRAMMER, 2012). Economically, public procurement is recognized as a means of efficiency and effectiveness of public spending. Broader political objectives, such as innovation, sustainability, social inclusion, and support for small businesses, should also be considered. This purchasing power amounts to more than 1 trillion Euros, 12% of the Gross Domestic Product, in the European Union (OECD, 2019). The concept of sustainable procurement is associated with the idea of sustainable development cited by the 1987 UN report passing through Rio 92, and the World Summit on Sustainable Development in 2002 in Johannesburg. It can be understood as the process through which public authorities seek to acquire goods and services with reduced environmental impact throughout the life cycle (TESTA et al., 2016), aiming to meet development objectives through

the purchase process, incorporating social, environmental, and economic aspects (WALKER AND BRAMMER, 2012). It then means achieving a good cost / benefit ratio based on the product's life cycle, generating benefits not only for the organization, but also for the society, the environment and the economy (LUTTENBERGER AND RUNKO LUTTENBERGER, 2016).

## **2.2. The blockchain technology**

Satoshi Nakamoto, outlined a new protocol for a point-to-point system using cryptocurrency called Bitcoin, called blockchain, originated in 2009 when Nakamoto described cryptocurrency as a model of peer-to-peer transactions (WEISS AND CORSI, 2017). In this model, with each new record, copies of the data are created (SABERI et al., 2018), solving a fundamental problem of transactions on the internet that is trust. For Paech (2017) the easiest way to understand blockchain is to think of it as a database on the internet to store value, where all participants in the network keep an identical copy. It aims to create a decentralized environment where no intermediary is in control of transactions and data (YLI-HUUMO et al., 2016). This distributed ledger stores transaction data in “nodes” (WEISS AND CORSI, 2017), which are interconnected computers around the world (TAPSCOTT AND TAPSCOTT, 2016). This decentralization is an important property, since the same information is in different nodes and is only confirmed when there is a consensus on the information between the nodes (KOUHIZADEH AND SARKIS, 2018). New transactions are added, but previous information cannot be removed (ØLNES et al., 2017), thus maintaining a growing list guaranteeing the integrity of the system, even in the face of dishonesty (SABERI et al., 2018). Its structure is chained, composed of a header, including a hash (encrypted header), containing its own value, the data of the block and the hash of the block connected to it. The creation of a new block is known as “mining” (ØLNES et al., 2017). Once the effort has been spent to satisfy a job test, the block cannot be changed (NAKAMOTO, 2009). All nodes are constantly updated with the information from the most recent transactions; therefore, all information is available anywhere, on any node, at any time (PAECH, 2017). There are two types of block chains: public and private. Bitcoin is an example of public blockchain, open to anyone, the private chain access to the network is restricted because not everyone can participate. The blockchain enabled the creation of smart contracts, computer programs that reside in this technology, executed automatically (PRADANA, 2018). These contracts give rise to the concept of "decentralized autonomous organizations" (DAOs), the most complex form of a smart contract (LYRA, 2019). They operate autonomously without human intervention, based on programmed rules and capable of even signing new contracts (PAECH, 2017), enabling aspects of traditional corporate governance using software, enabling the benefits of formal corporate structures and at the same time flexing the scale of informal groups (LYRA, 2019).

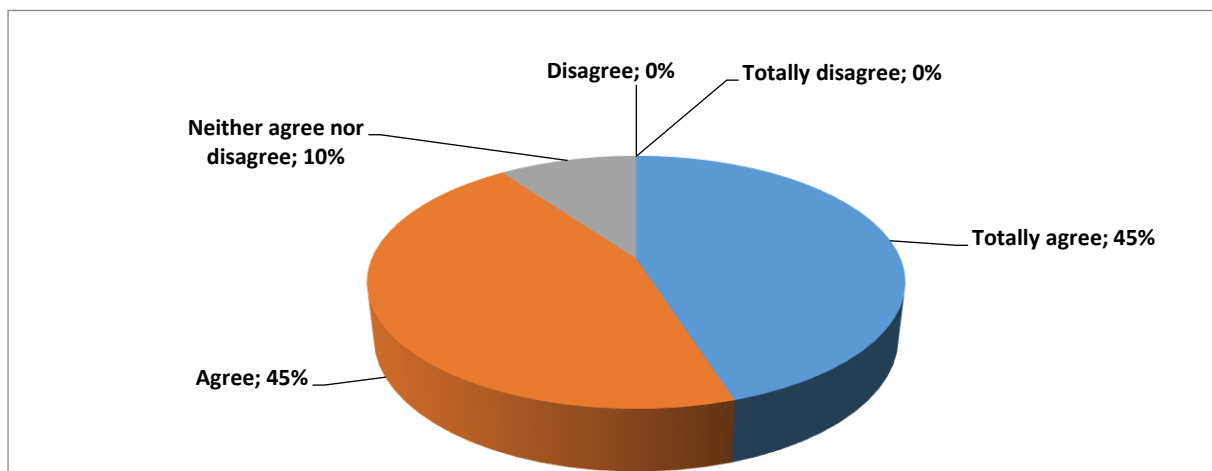
## **3. METHODOLOGY**

This work started with a systematic review of the literature, in order to provide greater familiarity with the problem, with a view to making it more explicit. Subsequently, a structured questionnaire was applied and the data was analyzed using descriptive statistics. The units of analysis were 92 prefectures in the state of Rio de Janeiro, in Brazil, with a sample population of 90 purchasing and bidding managers. The data were obtained from primary sources, by sending the questionnaire. According to Gray (2012), the questionnaires, adequate to the research objectives, allow standardized questions and an analytical approach exploring the relationships between variables. The statements were based on the literature, seeking to understand the barriers to the use of sustainable public procurement. After obtaining the emails from the responsible departments, shipments took place from September 2019 to January 2020.

The questionnaire statements were elaborated as questions, based on the literature and in order to seek later the understanding of possible barriers for the use of sustainable public purchases. For this, the variables that corresponded to the barriers related to the application of sustainable public procurement, the respective authors, and the correlation between them, were identified in the bibliographic review, so that the questions were in accordance with the research questions. In order to get closer to the managers' perception regarding the statements, for ordinal classification of responses and subsequent analysis of the results, the Likert scale was used, composed of 5 multiple-choice items from which the manager can choose one of the five options: (1) totally disagree; (2) disagree in part; (3) neither agree nor disagree; (4) agree in part and; (5) totally agree. Each item received a weight of 1 to 5 which were used for statistical analysis of the results. The likert scale was developed with the objective of measuring attitude, values and beliefs about different aspects. With the principle that the attitude follows a linear continuum (positive or negative), this method of creating items is widely used (ANUNCIAÇÃO, 2017). In these cases, sociometric and psychometric scales are often used, which are generally made up of a set of ordinal items (CURADO et al., 2013).

#### 4. ANALYSIS AND DISCUSSION OF RESULTS

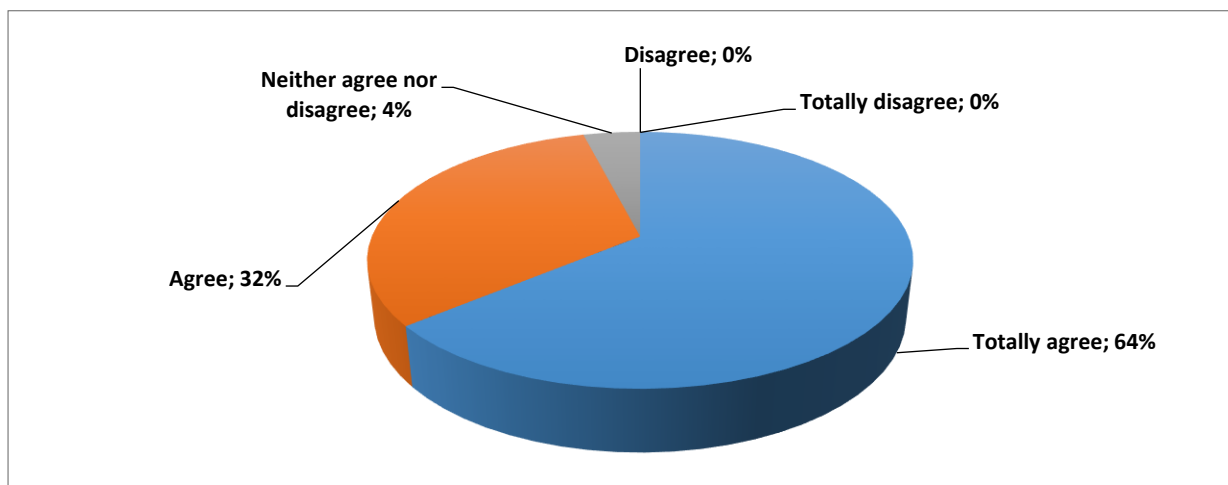
Among the results found, what was most relevant was the difficulty in specifying sustainable standards and criteria in terms of reference and bidding documents due to the lack of knowledge of the professionals. When examining this lack of knowledge, it was found that 90% of the respondents said they agree or totally agree that there is difficulty in specifying sustainable criteria, as shown in figure 1.



*Figure 1: Lack of knowledge about specification of sustainability standards  
(Source: Research data)*

This result exposes that disinformation is a barrier to sustainable acquisitions. Romodina and Silin (2016) and Kusi-Sarponget al. (2019) concluded through their research on the main barriers of this acquisition model, that one of the most important issues is related to the lack of knowledge of employees and collaborators about regulatory information and technical knowledge in these practices. The answers show the conception that there is a lack of information on technical specifications that lead to a more sustainable acquisition. The responses on the difficulty in finding these specifications in documents and websites, totaled a proportion of 82% by the selection of I agree and I totally agree also due to the lack of information on the composition of sustainable materials and products. Complementing this perception Testa et al. (2016) point out that intensifying information and raising awareness about sustainable public procurement can strongly support sustainable procurement.

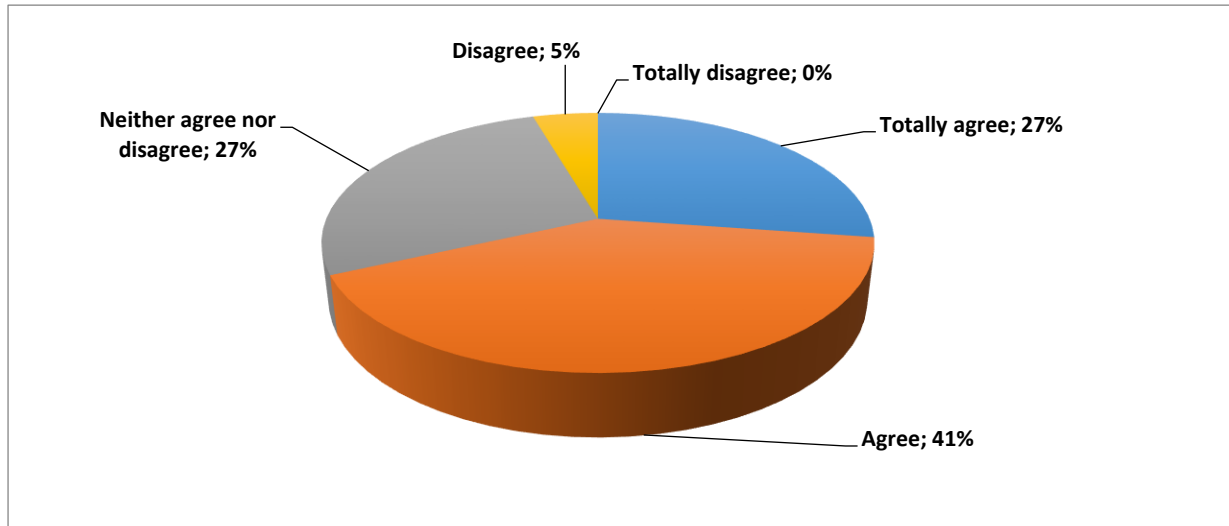
As with studies already mentioned, Zaidi et al. (2018) identified a lack of information about products with influences on the supply chain as a major problem. As shown in the graph, none of the respondents selected the options disagree or totally disagree for this question, which demonstrates a real feeling that there is a lack of knowledge on how to specify sustainable products and equipment, which somehow becomes a barrier to these acquisitions. Beker (2018) confirms that a barrier to the purchase of sustainable products is the lack of knowledge of the buyer to assess the characteristics of a specific product and recognize the existing advantages in relation to the others. For Costa and Matias (2020) sustainability does not come in itself, it requires sufficient resources and capabilities. The second question with the highest proportion of agreement was if there is difficulty to obtain information about the value chain of products, since the manufacturing and supply process. For Kouhizadeh and Sarkis (2018), the information needed for the selection of suppliers and manufacturers is seen by industry and academia as a critical issue for long-term success. Careful distinction and supplier assessment in the early stages are necessary to ensure the sustainability of these chains (SONG et al., 2017). Uttam and Ross (2015) point out that a solution to this problem would be the communication between the interested parties about the technical specification before the purchase. It's been sought then to understand the managers' perception of the use of a single system among the members of the value chain and if this tool would be useful in verifying the specifications and sustainable criteria required in the bidding process. The answers to this statement reached the highest proportion of agreement (63% - totally agree and 32% - agree) among all the questions presented, totaling 95% of the approval options, as shown in figure 2.



*Figure 2: Perception about using an integrated system  
(Source: Research data)*

According to Zaidi et al. (2018) organizations should design tools that can assist sustainable procurement. For Kouhizadeh and Sarkis (2018) the barrier of misinformation can be effectively alleviated using blockchain technology. Testa et al. (2016) state that the key success factor in sustainable public procurement is based on the knowledge necessary to support the information and training needs of the personnel involved in related tasks, as public procurement managers are not very sure how sustainable procurement can be implemented and what type of product is available on the market (ZAIDI et al., 2018). Considering that each product can have several specifications, this information can be recorded on the blockchain, along with its historical data. For example, Ikea has a table made of wood cut in a sustainable forest. The wood must be followed from cutting to manufacture to the final product to ensure that the tables were manufactured with that specific wood. This process is complex, but it can be managed with blockchain technology (SABERI et al., 2018).

The aim was also to assimilate the idea of managers about this complexity and specificity of the composition of the various products and how they become a barrier to transcribing them in the bidding documents. Only 5% disagreed that there is no difficulty and 68% agreed that it is complex, as illustrated in Figure 3.



*Figure 3: Complexity and specificity of the technical composition of the products  
(Source: Research data)*

Sanderet et al. (2018) confirm that government agents express concern about the complexity of product components. Even though it is generally difficult to obtain information about products, as well as to verify the manufacturing process, blockchain can be used to guarantee the purchase of sustainable products (SABERI et al., 2018). An integrated and online system could solve these problems from the moment that suppliers would keep their data available (SANDER et al., 2018). A proposal then would be to use a system, based on blockchain technology, that integrates several members of the value chain and society, forming an ecosystem of open innovation. This model consists of a dynamic and interactive network inserted in an innovation mindset, a configuration focused on the creation and diffusion of knowledge, including governments, the value chain, and users (COSTA & MATIAS, 2020). The knowledge shared by the blockchain could provide organizations with information on the catalog of products and suppliers, which would be an advance for this model and purchase (GONZÁLES-BENITO et al., 2016). According to Zaidi et al. (2018) organizations should design tools that can assist in this type of acquisition. Innovation is strongly linked to problem solving and, currently, challenges are related to complex problems that require structural changes in individual and collective life, such as sustainable development (COSTA & MATIAS, 2020). For Kouhizadeh and Sarkis (2018) the information limitation barrier can be effectively alleviated using blockchain technology. Historical performance and sustainability data from suppliers can be made available through this technology, thus making it easier for employees to examine internal energy saving and pollution reduction practices and records to determine the relative proactivity of suppliers' environmental practices, as suggested by Zhu et al. (2013) and creating a large open knowledge ecosystem. Breaking the boundaries between the company and its environment will allow the transfer of innovations to different markets, with bidirectional knowledge flows circulating outside organizational boundaries, highlighting the greatest benefit of knowledge sharing through partnerships and networks (COSTA & MATIAS, 2020). The products go through a chain that involves several participants. Having a tool to explore the origin of products can also create an environment of trust (SANDER et al., 2018).

It is then seen the possibility of creating a blockchain system, integrating the members of the value chain and, also, allowing several public bodies to share knowledge and feed each new process, as designed by Engelenburg et al. (2019). Blockchain programs would make it possible to share the best cases of sustainable procurement, rules, and standards, as suggested in the paper. Blockchain technology could record and provide knowledge of at least five key product data: nature (what it is), quality (how it is), quantity (how much there is), location (where it is) and ownership (who the owner is at any time) (SABERI et al., 2018). Enabling the creation of an innovation ecosystem, which can be understood as a network of relationships that brings together actors and objects that establish connections, both complementary and substitutive (COSTA & MATIAS, 2020). Internet of Things (IoT) devices may be linked to a blockchain platform to collect legitimate information about products and processes, increasing trust (PRADANA, 2018; SABERI et al., 2018). Sarkis et al. (2020) cite the need to accelerate sustainable actions after the COVID-19 pandemic and the implementation of smarter logistics systems and reverse logistics for materials and products enabled by IoT technologies. Other studies show that there is a possibility that information systems, combined with the technologies of the fourth industrial revolution (Industry 4.0) (PRADANA, 2018). Innovation is the main driver of sustainable development and the promotion of growth and, as a consequence, the topic it has become central to the agenda of policy makers, professionals and researchers. The digital transformation requires connections, networks, and high speed in innovation cycles (COSTA & MATIAS, 2020). It was also possible to identify that 55% of the managers indicated that they do not carry out the life cycle analysis to make the purchase decision. Testa et al. (2016), mention that public procurement awareness can mean changing from a strategy focused only on cost to orientation on the cost of the life cycle. In the context of sustainable public procurement, it is essential to demonstrate that purchasing processes and decisions need to go further, as the purchase price does not reflect the financial and non-financial gains offered by environmentally and socially better assets. The possibility of tracing a product from its production to disposal via the blockchain also allows, through this history, to facilitate the calculation of the value of the entire life cycle of the product, and to create a base with increasingly safe estimates (LUTTENBERGER & RUNKO LUTTENBERGER, 2016). With 77% agreement, the managers pointed out the influence of unethical and malicious employees on sustainable acquisitions, which are responsible for the preparation of the public notices, as a barrier. The managers transmitted the perception that there is a negative influence of these malicious people on the specification of products and services. Pradana et al. (2018) point out that a revolution has occurred by blockchain technology in unreliable processes by replacing unethical intermediaries with smart contracts, excluding corrupt agents from the value chain. Disintermediation, which is a crucial effect of applying blockchain technology, can mitigate potential opportunistic behavior (SABERI et al., 2018). However, the basic benefits of blockchain are related to improving data integrity and transactions that are irrefutable, which, in turn, can result in information traceability and transparency, which support the reduction of corruption and fraud (ØLNES et al., 2017). From the understanding of the respondents, 73% agreed that the concept of decentralized autonomous organizations (DAO) is a useful system model. After choosing the products and materials necessary for administration, a DAO could take over the operationalization of purchases, already with a panel of suppliers and products, with prices based on the cost of the life cycle. The purchasing process can be automated, integrating the stages of electronic auctions, eliminating the favor of suppliers and prices. With this technology, fraud can be avoided due to fidelity and transparency, and it is also possible to ward off unethical agents and hold the corrupt accountable for social damage (SABERI et al., 2018).



## 5. CONCLUSION

This work pointed out some sustainable public procurement actions, their possibilities of providing a better quality of life for society and the barriers to its implementation. With the advancement of innovation 4.0 and blockchain technology, it is possible to understand the proposals and possibilities to reduce barriers related to public procurement. After these observations and the analysis of the results, we return to the problem initially raised and it can be concluded that blockchain technology has a great potential for transformation for governments and in the promotion of sustainable actions, in the creation of an innovation ecosystem and in the requirements of the activities of suppliers and actors in the value chain.

The perception of public procurement managers made it possible to verify that one of the main difficulties of these managers is related to the lack of knowledge and information that ends up making public procurement unfeasible with a good economic result and that meets the environmental and social perspectives. However, studies are found that cite examples and models of actions that meet these objectives through government acquisitions. The creation of an open innovation ecosystem, on a distributed basis, integrating prefectures and other government agencies, would make it possible to share this knowledge. The feeling about transparency and confidence in public procurement has also been seen by this work. Both variables were very well evaluated by the participants as to their relevance in public procurement. The transparency required from public bodies is seen as a relevant factor for sustainable procurement. The need for consensus on the blockchain network for data changes and an ecosystem through a distributed network, where interested parties could actively participate in the network, would guarantee the required transparency in public administration. In other words, control and inspection bodies, courts of accounts and members of organized civil society could be part of this ecosystem and would have full visibility of the products and services being purchased, in addition to being nodes in the network and part of the consensus needed to the data alteration. It is possible to conclude that innovation has a disruptive potential for sustainable public procurement, allowing to meet economic and environmental aspects, but also to attend mainly to the pillar of social interests, giving the possibility of reducing social inequalities and unemployment, and improving the quality of life of the population, made blockchain an agent of change for governments.

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## LITERATURE:

1. AET, Agencia Estatal de Tributación (2020). Lançamento de novo sistema de tributação em blockchain. Retrieved 13.05.2020 from [http://beijing.chinatax.gov.cn/bjswjwz/xxgk/tzgg/202003/t20200302\\_447896.html](http://beijing.chinatax.gov.cn/bjswjwz/xxgk/tzgg/202003/t20200302_447896.html).
2. Anunciação, L. (2018). An Overview of the History and Methodological Aspects of Psychometrics-History and Methodological aspects of Psychometrics. *Journal for ReAttach Therapy and Developmental Diversities*. Aug 15; 1(1): pp. 44-58..



3. Beker, F. (2018). As Compras Sustentáveis do Governo Federal: Uma análise da Esplanada dos Ministérios. *Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira INEP*.
4. Brammer, S., and Walker, H. (2011). Sustainable procurement in the public sector: an international comparative study. *International Journal of Operations & Production Management*. Vol. 31 Issue: 4, pp.452-476.
5. Cauchick, P., Campos, L., Jabbour, A., Jabbour, C. (2017). *Elaboração de Artigos Acadêmicos: Estrutura Métodos e Técnicas*. Rio de Janeiro: Elsevier.
6. Costa, J. and Matias, J. (2020). Open Innovation 4.0 as an Enhancer of Sustainable Innovation Ecosystems. *Sustainability*, 12(19), 8112.
7. Curado, M., Teles, M. and Marôco, J. (2013). Análise de estatística de escalas ordinais. *Revista eletrônica trimestral de enfermagem*. Vol. 30.
8. Denny, T., Paulo, R. and Castro, D. (2017). Blockchain and agenda 2030 [Blockchain e agenda 2030]. *Revista Brasileira de Políticas Públicas*, 7 (3), pp. 122-141.
9. Engelenburg, S., Janssen, M., and Klievink, B. (2019). Design of a software architecture supporting business-to-government information sharing to improve public safety and security: Combining business rules, Events and blockchain technology. *Journal of Intelligent Information Systems*, 52 (3), pp. 595-618.
10. Grandia, J. (2016). Finding the missing link: examining the mediating role of sustainable public procurement behaviour. *Journal of Cleaner Production*. Volume 124, Pages 183-190.
11. Gray, D. (2012). *Pesquisa no Mundo Real*. Porto Alegre: Penso.
12. Hyvarinen, H., Risius, M. and Friis, G. (2017). A Blockchain-Based Approach Towards Overcoming Financial Fraud in Public Sector Services. *Bus Inf Syst Eng*. Vol. 59, pp. 441–456
13. Kouhizadeh, M., and Sarkis, J. (2018). Blockchain Practices, Potentials, and Perspectives in Greening Supply Chains. *Sustainability*, 10(10), 3652.
14. Kusi-Sarpong, S., Gupta, H. and Sarkis, J. (2019). A supplychain sustainability innovation framework and evaluation methodology. *International Journal of Production Research*, 57:7, pp. 1990-2008.
15. Luttenberger, A. and RunkoLuttenberger, L. (2017). Sustainable procurement. environmental life-cycle costing in maritime transport. *WMU Journal of Maritime Affairs*, 16:219–231.
16. Lyra, J. (2019). *Blockchain e OrganizaçõesDescentralizadas*. Brasport.
17. Mccrudden, C. (2004). Using public procurement to achieve social outcomes. *Natural Resources Forum*.
18. Nakamoto, S. (2009). Bitcoin: A Peer-to-Peer Electronic Cash System. Retrieved 15.04.2018 from [www.bitcoin.org](http://www.bitcoin.org).
19. OCDE, Organisation for Economic Cooperation and Development. Government at a Glance 2019.(2019).Retrieved 08.03.2020 from: [https://www.oecd-ilibrary.org/governance/government-at-a-glance-2019\\_8ccf5c38-en](https://www.oecd-ilibrary.org/governance/government-at-a-glance-2019_8ccf5c38-en).
20. Ølnes, S., Ubacht, J. and Janssen, M. (2017). Blockchain in government: Benefits and implications of distributed ledger technology for information sharing. *Government Information Quarterly*.
21. Paech, P. (2017). The Governance of Blockchain Financial Networks. *The Modern Law Review*.
22. Palfreyman, J. (2015). Blockchain for government?. Retrieved 20.11.2018 from <https://www.ibm.com/blogs/insights-on-business/government/blockchain-for-government/>

23. Pradana, A., Sing, G., Kumar, Y. and Mohammed, A. (2018). Blockchain Traffic Offence Demerit Points Smart Contracts: Proof of Work. *International Journal of Advanced Computer Science and Applications*. Vol. 9, No. 11.
24. Romodina, I. Silin, M. (2016). Perspectives of Introduction Sustainable Procurement in Public Procurement in Russia. *OeconomiaCopernicana*. 7(1) pp. 35-48.
25. Roman, A. (2017). Institutionalizing sustainability: A structural equation model of sustainable procurement in US public agencies. *Journal of Cleaner Productio*. Vol. 143, pp. 1048-1059.
26. Saberi, S., Kouhizadeh, M., Sarkis, J. and Shen, L. (2018). Blockchain technology and its relationships to sustainable supply chain management. *International Journal of Production Research*, , 57:7, pp. 2117-2135.
27. Sander, F., Semeijn, J. and Mahr, D. (2018). The acceptance of blockchain technology in meat traceability and transparency. *British Food Journal*. Vol. 120 No. 9, pp. 2066-2079.
28. Sarkis, J., Cohen, M. and Dewick, P. (2020). A brave new world: Lessons from the COVID-19 pandemic for transitioning to sustainable supply and production. *Resources, Conservation and Recycling*. Aug;159:104894.
29. Song, W. Xu, Z. Liu, H. (2017). Developing sustainable supplier selection criteria for solar air-conditioner manufacturer: An integrated approach. *Renew. Sustain. Energy Rev*. 79, pp. 1461–1471.
30. Tapscott, D. and Tapscott, A. (2016). *Blockchain Revolution: Como a tecnologia por trás do Bitcoin está mudando o dinheiro, os negócios e o mundo*. São Paulo: SENAI-SP.
31. Testa, F., Annunziata, E., Iraldo, F. and Frey, M. (2016). Drawbacks and opportunities of green public procurement: an effective tool for sustainable production. *Journal of Cleaner Production*. Vol. 112, pp. 1893-1900.
32. Uttam, K. and Roos, C. (2015). Competitive dialogue procedure for sustainable public procurement. *Journal of Cleaner Production*. Vol. 86, pp. 403-416.
33. Walker, H. and Brammer, S. (2012). The relationship between sustainable procurement and e-procurement in the public sector. *Int. Journal Production Economics*, Vol. 140, 256–268.
34. Weiss, M. and Corsi, E. (2017). Bitfury: Blockchain for Government. *Harvard Business Review*. Case Study. 818-031.
35. Jesse, Y., Ko, D., Choi, S., Park, S. and Smolander, K. (2016). Where Is Current Research on Blockchain Technology? *A Systematic Review*. PLOS ONE. 11.
36. Zaidi, S., Mirza, F. Hou, F. and Ashraf, R. (2019). Addressing the sustainable development through sustainable procurement: What factors resist the implementation of sustainable procurement in Pakistan? *Socio-Economic Planning Sciences*. Vol. 68.
37. Zhu, Q., Geng, Y., Sarkis, J. (2013). Motivating green public procurement in China: An individual level perspective. *Journal of Environmental Management*. Vol. 126. pp. 85-95.

# **ARE FEMALE-HEADED HOUSEHOLDS IN POORER LIVING CONDITIONS THAN MALE-HEADED HOUSEHOLDS? (DETERMINANTS OF HOUSEHOLD POVERTY IN 4 DISTRICTS OF TIMOR-LESTE - EVIDENCE FROM 4 DISTRICTS OF TIMOR-LESTE)**

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## **ABSTRACT**

*Achieving sustainable economic growth with a focus on combating poverty has become a key development goal for governments around the world. According to the UN, most of the world's poor live in rural areas, are young, have no formal education, and work in agriculture. Female-Headed Households are largely associated with deprivation and poverty, however, the relationship between gender and poverty is a complex, controversial, a debatable issue. Against this background this study has two main folds: find evidence on linkages of whether gender affects, or not, poverty and attempts to identify the determinants of poverty in four districts of Timor-Leste (Aileu, Bobonaro, Covalima, and Ermera) having different ecological, agricultural and socioeconomic characteristics. This study uses Timor-Leste's 2014 census data to construct a Standard of Living Index that reflects on people's permanent income, which can be seen as a poverty proxy, and later to explore the determinants of poverty and estimates the likelihood that a household has to be poor. The data is analyzed by both descriptive statistics and econometric analysis techniques. Location, education level, and sector of employment of the household head are among the key determinants of the households' standard of living. Despite the vulnerable characteristics of the female-headed household, the results do not provide evidence to support the claim that female-headed households are poorer than male-headed. Maybe this is because of the difference in other demographic and socio-economic factors leaving space for further research.*

**Keywords:** *Poverty, determinants of poverty, gender, Timor-Leste*

## **1. INTRODUCTION**

Achieving sustainable economic growth with a focus on combating poverty has become a key development goal for governments around the world, as reflected in the Sustainable Development Goals, namely Goal 1; “End poverty in all its forms everywhere”. The Government of Timor-Leste adopted the 2030 Agenda and Sustainable Development Goals through Government Resolution No. 34 of 2015 on 23 September 2015. Timor-Leste was poor already during the Portuguese colonization and Indonesian occupation of the country.

Poverty reduction has a high priority on the policy agenda of Timor-Leste since 2002. Nowadays, data from 2014, 41,8% of the population is living below the national poverty line, this value increases to 47,1 in rural areas (World Bank, 2016), the situation in Timor-Leste is better than in other Asian countries. On the contrary, if the Multidimensional Poverty Index (MPI) rate of 68% is taken into account (data from Demographic and Health Survey 2009-2010) this is one of the worst value among countries in Asia and the Pacific (OPHI, 2018). The government should continue its efforts to combat poverty and to improve the wellbeing of the Timorese people, especially in rural areas, to eliminate poverty by 2021-2030, as stated in the Timor-Leste Strategic Development Plan 2011-2030 (Timor-Leste, 2010). Understanding the poverty profile and the determinants of poverty is imperative for effective poverty reduction strategies for any country. Traditionally, poverty has been defined by an individual's level of income. In 2015 the World Bank updated the international poverty line from 1.25 USD to 1.90 USD a day, but poverty is not synonymous with low income only. According to the World Bank "poverty is pronounced deprivation in well-being" of an individual and comprises many aspects and dimensions (World Bank, 2000). Poverty is a multidimensional phenomenon. This leads to the questions of what is meant by well-being and how to measure well-being and deprivation. The multidimensional concept of poverty imposes severe restrictions on the number and the type of attributes that constitute poverty. Multidimensional poverty is made up of several factors that constitute poor people's experience of deprivation – such as poor health, inadequate living standard, lack of education, lack of income, poor quality of work, and the threat from violence. The UNDP currently estimates a Global Multidimensional Poverty Index for over 100 countries –including Timor-Leste (OPHI, 2018). The relationship between gender and poverty is a complex, controversial, a debatable issue and the "precise nature of the nexus between gender and poverty needs to be better understood and operationalized in policymaking" (Cagatay, 1998). In Timor-Leste, discriminatory attitudes towards women have existed for generations and this affects the lives of men and women. The females are facing gender discrimination concerning education, earnings, access to resources, economic and social rights, and opportunities, thereby creating a higher potential risk of poverty. Social and cultural costumes and practices in Timor-Leste restrict women's access to education and work, and hence women participate less in labor market. Moreover, with ideologies entrenched in the patriarchal form of society, women's access to family inheritance and productive assets is limited or absent (Narciso & Henriques, 2010) and women have also more difficulty accessing economic resources (World Bank, 2018). Thus, socio-economic gender bias against women in Timor-Leste places female-headed households at a greater risk of poverty, when women are the primary earners. However, in Timor-Leste few studies were made to get evidence about it, however the report "Poverty in Timor-Leste 2014" (World Bank, 2016) shows the opposite: *"As in 2007, poverty incidence is lower among female-headed households than male-headed households, but the difference in the incidence rates between the two groups has more than doubled in 2014"* (World Bank, 2016, p. 36). Against this background, this study, using data from the census 2014, attempts to identify the determinants of poverty in four districts of Timor-Leste and to seek whether there is a causal relationship between the gender of the household head and being poor in these districts. The next section provides a background and a literature review, section 3 is dedicated to the methodology and gives an overview of the study sites, section 4 states the empirical results, gives a demographic and socio-economic profile of households, and presents the probit model results, finally, section 5 provides policy implications and conclusions.

## 2. LITERATURE REVIEW

### 2.1. Defining household and household head

In general, a household comprises a father, mother, children, other relatives, as well as other persons sharing in their household arrangements. It is important to note that there is a clear distinction between 'household', which is construed in terms of domestic arrangements, and 'family', which is defined in terms of kin relationships. The Timor-Leste Census 2014 devised the following definitions: Private Household is defined "as one or more persons residing in the same dwelling, and who make common provision for food and other essentials for living" and "Head of Household is the person identified by other members of the household as such" and i.e. in the Timor-Leste CENSUS 2014 it is up to the respondents to define who is the head (Timor-Leste National Statistics Directorate, 2015). The likelihood that women will consider themselves heads of household and relate to themselves as such, especially if an adult man lives in the household, varies with cultural aspects and is associated with the status of these women. In Timor-Leste, a patriarchal society in general and where male authoritarianism is emphasized, there may be a tendency to overstate male headship, with a consequent underestimation of the number of female heads of households. On the other hand, the association between the head of household and primarily responsible for the economic well-being of the household is not guaranteed.

### 2.2. Measuring Poverty

Measuring poverty and wellbeing is an elusive, difficult and endless task. However, measurement is the first step to understanding and understanding the poverty profile and the determinants of poverty are imperative for effective poverty reduction strategies for any country. Poverty can be measured in different ways. On one hand, there are objective indicators such as income level, total consumption expenditure, or possession of assets, on the other, there are indicators that are harder to measure such as social status, self-esteem, or freedom. The traditional method to identifying poor people is concerning a dimension-specific poverty line, which reveals whether a person is deprived in that specific dimension. Consumption or income is the most commonly used approach to measuring poverty. Alternatively, the multi-dimensional poverty indices identify poor people based on whether a person is deprived in more than one dimension (Alkire & Foster, 2011), dimensions such as education, health, and living standards are used.

### 2.3. Poverty in Timor-Leste

Most of the reports and studies on poverty in Timor-Leste were produced by the World Bank in close collaboration with the government. Many of these reports and studies have used the more conventional method, calculating poverty from the consumption calculation and thus evaluating the people living below a certain poverty line. Data from 2014- TLSLS show a significant reduction in poverty in the country since 2007. *"At the national poverty line, which represents the cost of meeting basic needs in relation to food, shelter, and non-food items in Timor-Leste, the proportion of Timorese living in poverty declined from 50.4% in 2007 to an estimated 41.8% in 2014. At the internationally comparable extreme poverty line of \$1.90 (in 2011 purchasing power parity dollars), poverty in Timor-Leste fell from 47.2% to 30.3% over the same period"* (World Bank, 2016, p. 7). Poverty fell in both rural and urban areas, though the decline was larger in urban areas. Regarding the gender of the head of household "Poverty in Timor-Leste 2014" (World Bank, 2016) reports that *"As in 2007, poverty incidence is lower among female-headed households than male-headed households, but the difference in the incidence rates between the two groups has more than doubled in 2014"* (World Bank, 2016, p. 36).

A more in deep analysis of studies on Poverty in Timor-Leste and about the few studies which attempt to econometrically estimate the determinants of poverty in the country will be made in the full paper.

### **3. METHODOLOGY**

#### **3.1. Area of study and Data Source**

This study uses census data to look at the agricultural, demographic, and welfare reality of four districts of Timor-Leste. The districts were chosen as the unit of analysis because they are the key administrative-territorial division. The selected districts, Ailéu, Ermera, Bobonaro, and Covalima, are located in the central and west zone of Timor-Leste and correspond to a territorial continuum East-West and North-South. In the central zone, Ermera district concentrates most of the area and producers of coffee in East Timor and district of Ailéu, located near the largest urban district of Timor-Leste, Díli, benefits from this fact by specializing in the production of horticultural crops. In the West zone, along the border with West Timor, Bobonaro district has one of the largest rice-growing plains in Timor-Leste and the Covalima district has long been known for its potential for livestock production. Therefore, these four districts represent East Timor's agricultural economic activities, coffee in Ermera, livestock production in Covalima, rice in Bobonaro, and vegetables in Ailéu. An additional reason to choose this district is the long-standing knowledge and connection that the research team has with these districts. The study uses Timor-Leste 2014 census data, which collect information from a total of 58468 households in the four selected districts. This data is used to construct a Standard of Living Index (SLI) that reflects people's permanent income and can be seen as a poverty proxy. The SLI is used to explore the determinants of poverty and to estimate the likelihood that a household has to be poor. The data is analyzed by both descriptive statistics and econometric analysis techniques. The descriptive methods are employed to identify the extent of poverty, among the different demographic and socio-economic variables in the study area; the econometric analysis enlightens the determining factors for poverty. Descriptive statistics are calculated by the SPSS Version 22 and inferential statistics by GRETL 2018 and STATA 15 software packages.

#### **3.2. Standard of living index calculation**

To assess poverty, it is necessary to choose the relevant dimensions and indicators of well-being and after to select a poverty line, that is, a threshold below which a given household or individual will be classified as poor. Income and consumption are probably the two most common measures of poverty. However alone neither of them is enough to measure resources available to households and these measures may face low reliability. Poverty measure based on households' possession of assets or the housing condition of people is more likely to represent the household's inventory of wealth and therefore affect its income flow, revealing the lifetime wealth, and thus reflect upon the chronic living standard of people. The Standard of Living Index used in this paper is inspired by the MPI work of Alkire et al. (2011) but not all the dimensions are used. The indicators associated with education were not included because this dimension is explored as a poverty determinant and health indicators were not used because the 2014 census data related to health was not available. In sum, comparing with the MPI methodology, this study just uses the standard of living dimension. A Standard of Living Index based on wealth characteristics and household assets combines many factors that make up a household's poverty/wellbeing into one number, this is a reductive picture but a useful one for indicating overall rates of poverty/wellbeing.

Indicators used here are:

- Flooring, households living under houses with soil/clay, bamboo, and other floor are classified as deprived (zero points)
- Electricity, households living in houses with other sources of lighting rather than electricity are classified as deprived (zero points)
- Drinking water, households living in houses with tube well/borehole, rainwater collection, not protect well or spring, water vendors/tank, river lake, stream, irrigation channel and others as the main source of drinking water are classified as deprived (zero points)
- Sanitation, households living in houses with pour/flush to elsewhere (not septic tank/pit), pit latrine without slab/open pit, public latrine, no facility or bush and other, as the main type of human disposal used by household members are classified as deprived (zero points)
- Cooking fuel, households living in houses with coal, wood, and other as the main source of energy for cooking are classified as deprived (zero points)
- The number of assets, households which own 2 or fewer items from 16 items are classified as deprived (zero points).

The six above indicators were pooled and equally weighted to form a single aggregate variable in a unidimensional approach. For a given household if SLI falls below a threshold, then the household is identified as poor. In this case, households with deprivations in two or more indicators are considered poor.

### 3.3. Model specification and methods of SLI determinants

Logit and probit models have been widely used to measure the determinants of the probability of being poor in developing countries (World Bank, 2005) and (World Bank, 2007). Recent examples are (Garza-Rodriguez, 2015), (Islam, Sayeed, & Hossain., 2016, (Cho, 2017), and (Buba, Abdu, Adamu, & Jibir, 2018). This study uses a probit model, to capture the contributions of several factors on one's probability of being poor, specified as:

$$P(\text{poverty} = 1|\mathbf{x}) = \Phi(\beta_0 + \mathbf{x}\boldsymbol{\beta})$$

Where

$$\Phi(z) = \int_{-\infty}^z \phi(v)dv, \phi(z) = (2\pi)^{-1/2} \exp(-z^2/2)$$

are, respectively, the standard normal cumulative distribution function and the standard normal density function. The dependent variable, poverty, is one if the household is considered poor and zero otherwise;  $\mathbf{x}$  is a vector of explanatory variables and  $\boldsymbol{\beta}$  the corresponding vector of parameters.

The dependent variable P, measured by the LSI, is expressed as a dummy variable, taking a value of 1 if the household is poor and a value of 0 if the household is no poor. Thus, factors that negatively influence the dependent variable are those that reduce poverty and therefore have a positive impact on the living standard while those with positive effects increase the prevalence of poverty. The choice of independent variables, vector of parameters, was largely guided by the theoretical work and empirical literature on the determinants of welfare and poverty in developing countries and by the availability of data in the 2014 census. A key rule in selecting potential explanatory variables is that they are exogenous to the living standard/poverty which is taken as the dependent variable.

These variables (Table 1) are broadly grouped in socio-demographic characteristics -which comprise fixed geographical factor, household characteristics, head of household characteristics- and rural-agricultural characteristics which comprises land size and ownership, crops sold, livestock ownership, and technologies features.

*Table 1: Descriptive statistics of Determinants of Poverty – General Probit Model*

Variables	Type of variable	Min	Max	Mean	Expected sign	Hypothesized effect on living standard
<b>Poverty</b>	binary	0	1	0,49	na	na
<b>Geographical factors</b>						
<b>Dummy Aileu</b>	dummy	0	1	-	-	positive
<b>Dummy Bobonaro</b>	dummy	0	1	-	-	positive
<b>Dummy Covalima</b>	dummy	0	1	-	-	positive
<b>Rural</b>	binary	0	1	0,91	+	negative
<b>Household characteristics</b>						
<b>Sex ratio</b>	continuous	0	1000	124,02	-	positive
<b>Household size</b>	continuous	1	30	5,75	-/+	positive/negative
<b>Household size square</b>	continuous	1	900	40,88	+	negative
<b>Head of Household characteristics</b>						
<b>Gender</b>	binary	0	1	0,85	-/+	positive/negative
<b>Marital status</b>	binary	0	1	0,86	-	positive
<b>Age</b>	continuous	16	98	48,93	-	positive
<b>Age square</b>	continuous	256	9604	2616,97	+	negative
<b>Education</b>	continuous	0	20	4,99	-	positive
<b>Sector of employment</b>	binary	0	1	0,76	+	negative
<b>Rural and agricultural characteristics</b>						
<b>Farm hired labor</b>	binary	0	1	0,17	-	positive
<b>Agricultural level of activity</b>	binary	0	1	0,03	-	positive
<b>Cultivated land5</b>	binary	0	1	0,02	-	positive
<b>Land tenure status</b>	binary	0	1	0,49	-	positive
<b>LSUSEA *</b>	continuous	0	100,2	2,76	-	positive
<b>CropSEcount</b>	continuous	0	12	1,88	-	positive
<b>TechnologyCount</b>	continuous	0	8	1,01	-	positive
<b>Tractorcount10</b>	binary	0	1	0,2	-	positive

*Valid N (list wise) = 47952 \* Livestock Unit for South East Asia*

*Source: author's calculation using 2014 CENSUS data*

## 4. RESULTS AND DISCUSSIONS

### 4.1. Demographic and socio-economic profile of six types of households

The households were divided according to gender (male/female-headed households), poverty status (poor/non-poor households), and location (rural/urban households). A summary of key characteristics for each category is shown in Table 2.

*Table following on the next page*



Table 2: Summary of key characteristics of six types of households

Type of households & Key characteristics	Male HH	Female HH	Poor H	Non-Poor H	Urban H	Rural H
<b>Household characteristics</b>						
Number of Households	<b>49587</b>	8881	28570	<b>29898</b>	5337	<b>53131</b>
Percentage of Households %	<b>84,8</b>	15,2	<b>48,9</b>	51,1	9,1	<b>90,9</b>
Total of persons	<b>299106</b>	37096	157648	<b>178554</b>	33155	<b>303047</b>
Percentage of Total Persons %	<b>89</b>	11	46,9	<b>53,1</b>	9,8	<b>90,2</b>
Average size of household	<b>6,3</b>	4,8	5,5	<b>6</b>	<b>6,2</b>	5,7
<b>Head of household</b>						
Sex ratio	<b>108</b>	63,9	102	<b>102,4</b>	101,8	<b>102</b>
Average age	48	53,9	49,5	48,4	45,4	49,3
Married	<b>92,6</b>	7,4	48,1	<b>51,9</b>	86,5	<b>85,6</b>
Widowed	27,6	<b>72,4</b>	<b>56,8</b>	43,2	6,4	<b>10,3</b>
Never attended school %	47,1	<b>74,7</b>	<b>62,1</b>	41	28,6	<b>53,6</b>
Average school years total	<b>5,4</b>	2,5	3,3	<b>6,5</b>	<b>9</b>	4,57
Average school years who attended school	9,7	<b>10,3</b>	8,8	<b>11,3</b>	<b>12,7</b>	9,6
Self-employed farmer %	74,9	<b>80,6</b>	<b>86,5</b>	65,1	44,5	<b>78,7</b>
Private Sector	11,22	12,74	7,9	<b>14,9</b>	<b>24,6</b>	10,1
Public sector	<b>13,92</b>	6,65	5,6	<b>20</b>	<b>30,9</b>	11,3
<b>Assets</b>						
Number of assets	<b>2,13</b>	1,62	1,2	<b>2,9</b>	<b>3,6</b>	1,9
Cultivated land, more than 5ha %	<b>1,9</b>	1,1	1,7	<b>1,8</b>	1	<b>1,8</b>
<b>Crossing the 6 types of households with each other</b>						
MHH	-	-	<b>84,2</b>	<b>85,4</b>	<b>84,5</b>	<b>84,8</b>
FHH	-	-	15,8	14,6	15,5	15,2
Poor	48,5	<b>50,9</b>	-	-	15,1	<b>52,3</b>
Non poor	<b>51,5</b>	49,1	-	-	<b>84,9</b>	47,7
Rural H	<b>90,9</b>	<b>90,7</b>	<b>97,2</b>	<b>84,8</b>	-	-
Urban H	9,1	9,3	2,8	15,2	-	-

Source: author's calculation using 2014 CENSUS data

Regarding head of the household gender, 15,2 per cent of household heads are female. The share of the total population living in FHH is smaller than the share of FHH is smaller than the share of FHH. This is confirmed by the mean size of the household, which is 6,3 for MHH and 4,8 for FHH. Concerning the poverty status, the mean size of the household is 6 for non-poor and 5,5 for the poor household. Regarding the rural/urban location, the mean size of the household is 5,7 for rural and 6,2 for the urban household. The sex ratios inform us about the gender composition of these six kinds of households. The data shows that this value reaches the highest (108) in male-headed households and the lowest (63,9) in FHHs. Thus, including household heads, FHHs have fewer males per female than do male-headed households. This is particularly important because males have more access to and control over societal resources, however, when comparing poor and non-poor households and rural and urban households these differences are very small.

On average, female heads of households are older than male heads of households, poor household heads are older than non-poor household heads and rural households have on average an older head than urban households. The data confirm that a common route to household headship for women is likely to be widowhood and that widows do form the highest proportion of FHHs. On the contrary, the great majority of MHH are married. On the other hand, the great majority of heads of households in the poor and non-poor household are married; however, there are more widowed heads in the poor household than in non-poor households. In both locations, rural and urban, most heads of households are married and there is more widowed head of households in rural areas than in urban areas. According to Table 3, female-household headship is most common among households where the head has not attended the school (0 years) and it is least common among households where the head has higher education. For MHH 0 years of school is also the most common situation but with a much smaller percentage (FHH 76,5% and MHH 48,6%). In most cases of poor (63,4, %) and rural (55,2%) households the head have also not attended the school. Male household heads tend to be better educated than their female counterparts, in that more males tend to proceed to a secondary and university level of education, and the differences between the sexes are significant. Household heads who have not attained or attained a level no higher than primary are 72.2 per cent for male and 86.5 per cent for female household heads. The difference is as much as 14,3 percentage points in favor of the males. At the secondary and higher education level, the difference is not so evident. For the region, only 3,8 per cent of male household heads and 1,5 per cent of female household heads have achieved a university level of education. If we consider the poverty status of the household 65,5 per cent of poor household heads in the region and 44,5% of non-poor household heads have not attained or attained a level no higher than primary. In urban areas, 41,6 attained at least the secondary school from which 11,8 reach the university, on the other hand in the rural area most households' heads not attained the school at all (55,2%).

*Table 3: Number of School years/Level of school and gender of the head of household and poverty status of the household*

Number of School years/Level of school		Head of household gender		Household poverty status		Household location	
Years	Level	Male	Female	Poor	Non-poor	Urban	Rural
0	No School	48,6	76,5	63,4	42,7	29,8	55,2
3	Pre- Primary	2	1,1	1,8	1,8	1,8	1,8
7	Primary	21,6	8,9	19,5	19,8	17,1	19,9
9	Pre- Secondary	8,9	5	7,1	9,5	9,7	8,2
15	Secondary	13,8	6,2	7,1	18	26,8	11,2
18	Polytechnic	1,3	0,6	0,3	2	3	1
20	University	3,8	1,5	0,7	6	11,8	2,6

*Source: author's calculation using 2014 CENSUS data*

For both sex and both poverty status, the most common sector of employment is by far the self-employment farmer, followed by the public sector, self-employment non-farmer, and private sector (Table 4). In terms of their occupational classification, more female household heads, more head of poor households, and more rural head of households are involved in agriculture. It is in the self-employment farmers occupation where the greatest proportion of female heads of households are to be found, 80.60 per cent of their number being in this occupational category, for males this value is slightly lower (74,9%).

It is also in self-employment farmers occupation where the greatest proportion of heads of poor households are to be found 86,5%, for non-poor households this value is much lower (21,4 lower, i.e. 65,10%), for rural areas the value is 78,7, on the contrary in urban areas this value decreases to 44,5%.

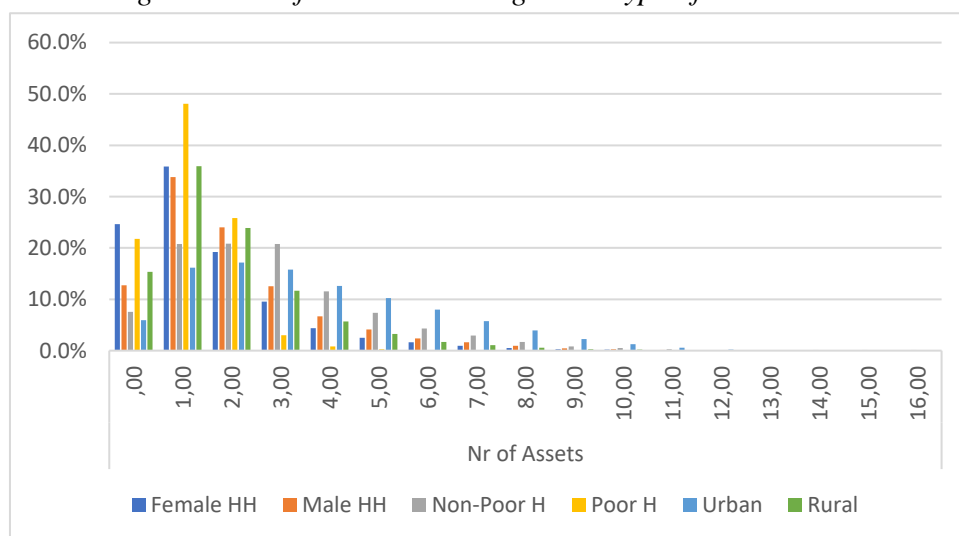
*Table 4: Head of household Sector of employment %*

Sector of Employment	Head of the household gender		Household poverty status		Household location	
	Male	Female	Poor	Non-poor	Urban	Rural
Employed in Public sector	13,9	6,6	5,6	20,2	31	11
Employed in Other (Private) sector(s)	5,1	3	2,9	6,7	10	4
Self-employed non-farmer	6,1	9,8	5	8	14,6	5,8
Self-employed farmer	74,9	80,6	86,5	65,1	44,5	78,7

*Source: author's calculation using 2014 CENSUS data*

In Figure 1 the distribution of female- and male-headed households, poor and non-poor households and rural-urban households are compared across assets levels categories. A higher proportion of male-headed households, non-poor households, and urban households have more assets, while a higher proportion of FHHs, poor households, and rural households have very few assets.

*Figure 1: Nr of assets according to the type of household*



*Source: author's calculation using 2014 CENSUS data*

Regarding the size of cultivated land (Table 5) during the last 12 months, a very high proportion (66,8%) of FHHs cultivated less than 1 ha, while a higher proportion (36,0%) of male-headed households cultivated between 1 and 5 ha and/or more than 5ha. A similar pattern is found for poor and non-poor households, with a very high proportion (62,3%) of poor households cultivated less than 1 ha, while a higher proportion of non-poor households cultivated between 1 and 5 ha and/or more than 5ha. 3% of non-poor households do not cultivate land, which indicates that maybe they have other occupations, this value dropped off to 1,7% for the poor households. For both locations, the majority of household's head cultivate less than 1ha, followed by from 1 to 5 ha and in 3<sup>rd</sup> place more than 5ha.

*Table 5: Estimated size of cultivated land during the last 12 months %*

Estimated size of cultivated land during the last 12 months	Head of household gender		Household Poverty status		Household location	
	Male	Female	Poor	Non-poor	Urban	Rural
< 1 Há	59,9	66,8	62,3	59,6	53,4	61,6
1-5 Há	36	29	34,3	35,6	39,4	34,6
> 5 Há	1,9	1,1	1,7	1,8	1	1,8
No Land	2,2	3,1	1,7	3	6,1	2

*Source: author's calculation using 2014 CENSUS data*

Although both -poor households and non-poor households- are in a larger proportion headed by men, FHHs constitute a non-negligible proportion of all households in these 4 districts of Timor-Leste (15,2%). As in most countries, female-headed households constitute a share of households that are relatively more vulnerable: the household head has no education, is older, and the majority falls in the poor category (50,9%, slightly higher proportion than male-headed households - 48,5%). Overall, this comparison suggests that more female than male-headed households are economically disadvantaged, but the difference is not very significant. According to the data, 90,9% of the households are situated in rural areas where 52,2 % are poor, on the contrary in urban areas only 15,1 are poor. And more relevant of all is the fact that roughly half (48,9%) of the households are poor and within this group a huge proportion, 97,2% live in rural areas. This leads us to the next step which is to identify some determinants of poverty in the region.

#### 4.2. Determinants of poverty

To explore the determinants of poverty a model was conceptualized as mentioned in point 3.3. The descriptive statistics of the variables used were presented in Table 1, Table 6 reports the results of probit model estimations for the living standard/poverty. As can be seen, almost all determinants are significant, the exceptions are sex ratio, household size squares, and cultivated land<sup>5</sup>, and conform to a priori expectations.

*Table following on the next page*

*Table 6: Determinants of Poverty – General Probit Model*  
*Dependent Variable: Living Standard Index (poor = 1)*

Variable	coeficiente	standard error	Z statistics	P value	Sig.	Slope
<b>Const</b>	0,443413	0,0782760	5,665	0,00	***	
<b>Aileu</b>	-0,188799	0,01967	-9,693	0,00	***	-0,075
<b>Bobonaro</b>	-0,469223	0,015796	-29,65	0,00	***	-0,184
<b>Covalima</b>	-0,372414	0,017884	-20,79	0,00	***	-0,147
<b>RuralUrbano</b>	0,725668	0,028037	26,56	0,00	***	0,267
<b>SexRatio</b>	-1,78510e-05	6,17E-05	-0,2874	0,77		0,000
<b>HH_PERSONS</b>	-0,0450733	0,008239	-5,418	0,00	***	-0,018
<b>HHsquare</b>	0,000367556	0,00055	0,6623	0,50		0,000
<b>Male</b>	0,150782	0,023867	6,318	0,00	***	0,060
<b>Married</b>	-0,0597623	0,025829	-2,302	0,02	**	-0,024
<b>Age</b>	-0,0193700	0,002711	-7,078	0,00	***	-0,008
<b>Agessquare</b>	0,000120746	2,63E-05	4,541	0,00	***	0,000
<b>Schoolyears</b>	-0,0461866	0,001241	-37,52	0,00	***	-0,018
<b>Sectorofemploye</b>	0,434458	0,016081	27,16	0,00	***	0,170
<b>HiredLabor</b>	-0,156355	0,016818	-9,258	0,00	***	-0,062
<b>LevelofAgricultu</b>	-0,0984277	0,039308	-2,515	0,01	**	-0,039
<b>Cultivatedland5</b>	-0,0274359	0,045112	-0,6049	0,54		-0,011
<b>Ownland</b>	-0,104823	0,012317	-8,511	0,00	***	-0,042
<b>LSUSEA</b>	-0,00500834	0,001447	-3,304	0,00	***	-0,002
<b>CropSEcount</b>	-0,0115573	0,002425	-4,790	0,00	***	-0,005
<b>TechnologyCount</b>	-0,00664351	0,003595	-1,841	0,06	*	-0,003
<b>Tractorcount10</b>	-0,256010	0,016261	-15,67	0,00	***	-0,101

*Notes: Observations / n = 47925 \*significant at 10%, \*\* at 5% and \*\*\* at 1%*

*Source: author's calculation using 2014 CENSUS data*

*Table 7: The information criteria's for the model*

Mean dependent var	0,500678	Adjusted R-squared	0,118334
McFadden R-squared	0,118997	Log-likelihood	-29266,08
Number of cases 'correctly predicted'	31437 (65,6%)		

*Source: author's calculation using 2014 CENSUS data*

Households living in a district other than Ermera (Aileu, Bobonaro, and Covalima) are less likely to be poor while living in rural areas increase the chances of being poor, these are in line with the results of the Poverty in Timor-Leste 2014 (World Bank, 2016, p. 26) which indicates Ermera as 2nd poorest district (56.7%) in poverty incidence. therefore households that resided in Aileu, Bobonaro, and Covalima are 7,5 / 18,4 and 14,7 percentage points, respectively, less likely to be poor than those that resided in Ermera. The urban and rural segments have different characteristics and different forms of living, rural households are heavily dependent on agriculture for their livelihood. Due to this fact, and in line with the Timor-Leste Poverty (World Bank, 2016, p. 10) is expected that the SLI will be lower in rural areas. This is confirmed, households that reside in rural areas are 26,7% more likely to be poor. Sex ratio, is not a significant factor, however, reflects the fact that household with a great proportion of males is less poor, this fact is in line with the expectations, since women and men have different rights and access to resources of all kind and this has an impact on poverty/SLI. The Household size carries negative coefficients whereas household size squared carries positive coefficients, i.e. presents a non-linear relation. Therefore, increasing household size at lower initial levels would decrease poverty faster than at higher initial levels of household size. Ultimately, at very high levels, the increasing household size would increase poverty.

The results show that at lower initial levels increase the size of the household in one unit, decreases the probability of being poor by 1,8%. The results indicate that everything else held constant the gender of the HH is significant in determining poverty, with male-headed households having 6% more chances of being poor. This result is contrary to some literature and expectation since in many societies, including Timor-Leste, women are systematically excluded from access to essential assets, such as land, and have a lower level of education, but in line with data from Timor-Leste Poverty (World Bank, 2016) which states that “*As in 2007, poverty incidence is lower among FHHs than male-headed households*”. The fact that FHHs are less likely to be poor than male headed-households is likely to be driven by a larger share (44 percent) of FHHs being remittance recipients compared to 23 percent for male-headed households (World Bank, 2018). The marital status connection to poverty may be derived from several factors that are associated with marriage, it is expected that to be married or living together reduce the probability of being poor. In our work households headed by a head of households who were not married or living together were 2,4% more likely to be poor than those headed by a married person. Age of the household carries negative coefficients whereas age-squared has positive coefficients, the head being older reduces the probability of being poor up to certain age, from which the relationship is reversed, implying nonlinear relationships. Thus, consistent with the life-cycle hypothesis, poverty is relatively higher at young ages, decreases at middle age, and then increases again at old age. At initial stages increase one year the age of the head of household decrease the chances of being poor in 0,8%. A one-year increase in schooling led to a 1,8 percentage points decrease in the probability of being poor. The education level of the household head is widely recognized as a key factor to improve the living standard, increases the skills and the earning capacity of a person, determining the number and nature of opportunities available to enhance livelihood strategies and reduced poverty levels. The better educated a household head is, the lower the risk of poverty. The results show that to be self-employment farmers is a factor that increases the probability of being poor. The chances of falling into poverty are 17 times more likely if the head of household is a self-employment farm. Since 75,6 % of heads of households are self-employment farmers and to be self-employment farmer is a strong poverty determinant factor, we decide to enlarge the model with variables related to agriculture to explore which features are more relevant in explain farmer's poverty. Only in very productive activities, the profits are high enough to hire workers, therefore the households which hire non-household workers are the ones with bigger income and less like to be poor. In this work to hire non-household workers to decrease the chances of being poor by 6,2%. Similarity households who have an agriculture activity oriented to the market (producing mainly to sell in markets) are less like to be poor since this increases the household income. This is consistent with the fact that an increase in the number of different crops (CropSEcount) that are producing to sell decreases the chances of being poor. Households who have an agriculture activity oriented to the market are 3,9 times less likely to be poor and increase the number of crops sold in the market in one unit, decrease the risk of poverty by 0,5%. Having land of their own has a great positive impact on poverty, the households with their own land are 4,2% less likely to be poor. Regarding the land size, to have in total more than 5ha has also a positive, but not significant, impact on poverty. This result is consistent with the findings of many authors who concluded that ownership of assets such as land reduces the probability of being poor, for instance, according to Dowling & Yap, “... *various studies using microeconomic data from different countries highlights the importance of having or obtain physical assets to break out of poverty cycle. These physical assets include land and farm implement, as well as farm animals*” (Dowling & Yap, 2009). The probability of being poor generally declined with increasing livestock herd size. Increase the LSUSEA in one unit, decrease in 0,2 % the chances of being poor. The increase of technologies used and the use of tractors are also factors with a positive impact, contributing to reduce poverty.

In this study increase the number of used technologies by 1, decrease the chances of being poor by 0,3 percent, on the other hand, the use of hand or four wheels decrease the chances of being poor by 10,1 percent, highlighting the importance of mechanical traction, hand or four wheels, to increase agricultural performance and therefore increase income.

## 5. FINAL REMARKS

The two main objectives of this paper were to identify the determinants of poverty in four districts of Timor-Leste (Aileu, Bobonaro, Covalima, and Ermera) and find evidence on linkages of whether gender affects, or not, poverty. This study uses Timor-Leste's 2014 census data to construct a Standard of Living Index that reflects on people's permanent income. The data is analyzed by both descriptive statistics and econometric analysis techniques. From the results, the main points to highlight are: Around half of the households are poor; within this group, the household has an average size of 5,75 and a sex ratio of 124,0; in average the head of households is male, married, 49 years old, with five years of education and a farmer; agriculture uses low levels of hired labour, the agricultural activity market-oriented is very low, large farms are residual, around half of households have ownership of cultivated land, the average livestock standard units is 2,8, households sell an average of two crops, only one of modern inputs/technologies is used and one fifth uses hand or four-wheel traction. This article concludes that all independent variables use to explain poverty are conform to a priori expectations and significant, with 3 exceptions: sex ratio, household size squares, and cultivated land<sup>5</sup>. Regarding the determinants some of the main findings are:

- Regional analysis shows that poverty in Timor-Leste is more prevalent in rural areas than elsewhere and that Ermera is the district with a higher % of poor household and where the likelihood of being poor is higher;
- Gender of the HH positively related to poverty, implying that FHH had lower probabilities of being poor than MHH.
- Age brings gains in household welfare and negatively relates to poverty. However, the relationship between age and poverty is nonlinear, implying that poverty is relatively higher at young ages, decreases at middle ages, and then increases again at old ages
- Head of households whose heads were employed in a sector rather than “Self-employment farmer” were less like to be poor. This is the determinant that presents the biggest impact in poverty, it, therefore, becomes imperative to investigate how to improve the living standard and promoting sustainable development of the self-employment farmers.
- Educational attainment positively relates to welfare and lowers poverty, a one-year increase in schooling led to a 1,8 percentage points decrease in the probability of being poor.
- Level of agriculture positively relates with welfare and lowers poverty, HH with an agriculture activity oriented to the market are less like to be poor,
- To have land of their own have a great positive impact on poverty and livestock ownership reduce poverty;
- The increase of technologies used is also a factor with a positive impact, contributing to reduce poverty, among them it is worth highlighting the importance of mechanical traction.

The results indicate that male-headed households having 6% more chances of being poor, this fact is likely to be driven by a larger share (44 percent) of FHHs being remittance recipients compared to 23 percent for male-headed households. A variable that we do not explore in this work due to the lack of data. Despite this fact, there is the consensus that FHHs face obvious limits in accessing productive assets, credit, health care, and agricultural services in Timor-Leste, which make them more vulnerable to poverty. It should also be kept in mind that this finding is based upon the assumption that consumption is equally distributed within the households.

Strategies and or policies aimed at poverty reduction need to identify these factors that are strongly related to poverty as key ingredients in poverty reduction efforts. Short-term policies for poverty reduction should concentrate on those areas where poverty is higher (i.e. rural, farmers, low level of education). Most people, and especially the poor, still live in rural areas and will continue to be rural-based soon. A route that takes the people out of farming and rural areas and into urban areas and wages employment or business is not the solution. It, therefore, becomes imperative to investigate how to improve the living standard and promoting sustainable development of the self-employment farmers. Interventions that are effective in supporting the agricultural and forestry (and fishing) sectors on which the poor rely are needed, improving productivity (e.g. promoting improved technology adoption) and processing of food and other marketable products, and develop effective access to markets at all levels are part of them. Education is another key factor, to increase education levels among the poor is crucial to reduce poverty and for this is necessary to improve the quality of education services, namely in rural areas. Initiatives for promoting economic diversification and employment creation should be created as well.

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## LITERATURE:

1. Alkire, S., & Foster, J. (2011). Counting and Multidimensional Poverty Measurement. *Journal of Public Economics, Volume 95, Issues 7 and 8*, 476-487. doi: <https://doi.org/10.1016/j.jpubeco.2010.11.006>.
2. Alkire, S., Roche, J., Santos, M., & Seth, S. (2011). Timor Leste Country Briefing. *Multidimensional Poverty Index Country Briefing Series*. Retrieved from [www.ophi.org.uk/policy/multidimensional-poverty-index/mpi-country-briefings/](http://www.ophi.org.uk/policy/multidimensional-poverty-index/mpi-country-briefings/)
3. Buba, A., Abdu, M., Adamu, I., & Jibir, A. (2018). Socio-Demographic Determinants of Poverty in Nigeria and its Gender Differentials. *European Scientific Journal* 14(14).
4. Cagatay, N. (1998). GENDER AND POVERTY. WP 5 .
5. Cho, S. K. (2017). Determinants of poverty status in Rwanda. *African Development Review*, 29(2): , pp. 337-349.
6. Dowling, J. M., & Yap, C.-F. (2009). *Chronic Poverty in Asia: Causes, Consequences and Policies*. Singapore: World Scientific.
7. Garza-Rodriguez, J. (2015, dec). The Determinants of Poverty in the Mexican States of the US-Mexico Border. *Estudios Fronterizos, [S.l.]*, v. 17, n. 33,, pp. 141-167.
8. Islam, D., Sayeed, J., & Hossain., N. (2016). On determinants of poverty and inequality in Bangladesh. *Journal of Poverty: 1–20*. <https://doi.org/10.1080/10875549.2016.1204646>. doi:<https://doi.org/10.1080/10875549.2016.1204646>
9. Narciso, V., & Henriques, P. (2010, February). Women and Land in Timor-Leste - Issues in Gender and Development. *Indian Journal of Gender Studies*, 171:49-72.
10. OPHI. (2018). *Global MPI Database*. Retrieved from OPHI - Oxford Poverty & Human Development Initiative: <http://www.dataforall.org/dashboard/ophi/index.php/>
11. Oxford Poverty and Human Development Initiative. (2013). *Timor-Leste Country Briefing*. OPHI, University of Oxford, Multidimensional Poverty Index Data Bank, Oxford. Retrieved from <https://www.ophi.org.uk/wp-content/uploads/TimorLeste-2013.pdf>
12. Rapsomanikis, G., & Maltsoglou, I. (2005). The Contribution of Livestock to Household Income in Vietnam: A household typology based analysis.
13. Timor-Leste. (2010). *Timor-Leste strategic development plan, 2011-2030*. República Democrática de Timor-Leste, Dili. Retrieved from <http://timor-leste.gov.tl/wp-content/uploads/2011/07/Timor-Leste-Strategic-Plan-2011-20301.pdf>



14. Timor-Leste National Statistics Directorate. (2015). Glossary. Timor-Leste. Retrieved March 2018, from <http://www.statistics.gov.tl/glossary/#thead>
15. World Bank. (2000). *World Development Report 2000/2001: Attacking Poverty*. Washington: World Bank.
16. World Bank. (2005). *Introduction to Poverty Analysis*. Washington DC.: World Bank.
17. World Bank. (2007). *East Asia 10 Years After the Financial Crisis*. Washington DC.: World Bank.
18. World Bank. (2016). *Poverty in Timor-Leste 2014 (English)*. Washington, D.C.: World Bank Group. Retrieved March 2018, from <http://documents.worldbank.org/curated/en/577521475573958572/Poverty-in-Timor-Leste-2014>
19. World Bank. (2018). *Timor Leste - Systematic Country Diagnostic : Pathways for a New Economy and Sustainable Livelihoods (English)*. Washington, D.C.: World Bank Group. Retrieved June 2018, from <http://documents.worldbank.org/curated/en/524131528837983427/Timor-Leste-Systematic-Country-Diagnostic-Pathways-for-a-New-Economy-and-Sustainable-Livelihoods>

# **FAMILY OWNED BUSINESSES AND THEIR INNOVATIVE BEHAVIOR: AN THEORETICAL BACKGROUND**

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## **ABSTRACT**

*Family-owned businesses have been a hot topic in the academic community in recent years in which there has been a great focus on studying these types of firms. The literature reveals contrast finding regarding family-owned businesses and their innovative behavior as their propensity to create new innovation output. The aim of the theoretical background is to analyse in which ways innovation has an impact on family-firms and what is expected from them. We try to uncover the main state of the art and what hinders family businesses in their innovation strategies and why innovation must be perceived as a vehicle to economic prosperity and survival.*

**Keywords:** *family involvement, innovation, family business*

## **1. INTRODUCTION**

Family Businesses (FB) are a critical asset for economic development [1]. They are represented all over the world in virtually every sector. FB are frequently depicted as being traditional businesses afraid of risk and withdrawing from new opportunities [1]. There are several dimensions that differentiate FB from non-FB [2, 3]. One of the most distinguishable features in these companies is their management, organizational and ownership structure [4, 5]. FB are usually correlated with being efficient and effective, they tend to have a stronger pledge towards the firm and to the family values [9, 10]. The family's social and emotional side is also one of distinction [3, 6]. In FB there is a direct linkage between the family and the ongoing business[7], meaning that, family-life circles around the life of the company [8]. Nevertheless, some authors suggest that family involvement does not indicate better performance, rather, they are more inclined to underperform in contrast to non-FB [10, 11]. Family involvement alters the way in which the businesses is drove, meaning that FB have a different set of values that characterizes them from the rest [12]. Thus, the family dimension shapes the organization culture of the business meaning that it sets economic and non-economic goals and founds the path to accomplish them [3, 16, 17]. Researchers have recognized FB as being resilient with a great aptitude towards long-term survival with great capacity to access human, social and financial resources [13,15]. The present work has the goal to analyse FB and the prevalent strategies they follow when it comes to innovation.

## **2. FAMILY INVOLVEMENT**

### **2.1. Family Ownership Structure**

FB are one of the most predominant types of business organizations around the world [2, 4]. Although they tend to be in smaller size, mostly small and medium firms, FB are inserted throughout all economic sectors, as they embody a huge share of the economic sustainability [5].

The involvement of a family has effects in the way they implement their businesses strategies, actions, decisions and ultimately their performance. Consequently, FB are different from non-FB in the sense they operate differently [2,6,7]. There is a wide definition of FB in the literature, some scholars may use a different definition from others, regarding the subject in which the research is being developed [8,9]. However, the most consensus definition of FB is when family member exercises a strong influence on the firm or have at least 50% of the capital [10,11]. FB lean to be more motivated towards family-centered goals such as legacy, family-harmony and perpetuate the family's identity this can be a challenge towards the financial goals of the firm [2,4]. The non-economic goals present in FB can be defined as socioemotional wealth (SEW) [4]. These goals can be aligned or conflicting towards the financial performance of the firm leading to a broader range of strategic choices and outcomes in contrast to non-FB [3,5,12]. Some research proposes that in order to preserve their SEW these firms may dismiss business opportunities of financial gain, in order to preserve their ownership control and loss of SEW [4,10,13]. This aversion towards risk can prevent strategic change and can point to lower levels of diversification and investment, making the performance in FB lower comparing to the rest [14–18]. Nevertheless, FB have a higher tendency to survive, due to their SEW, when they are facing threats they can backdown on the family-centered goals and engage in riskier activities [19]. FB have a long-term orientation instead of short-term goals [20]. They also have a great aptitude to access human, social, and financial resources which is positively related to their survival skills [4,21]. In order to better understand the dynamics in FB Davis & Tagiuri, [22] established the 3 circle model, this model includes three elements: Family, Ownership and Business. This model describes how family members interact and cooperate among each other, in the sense that, they make decisions and improve management strategies in order to meet the goals of the family and the organization [47]. Nevertheless, the presence of family members inside the organization can lead, in some cases, to organizational tensions which can affect the decision-making process [13,23]. The family sub-system is a crucial element to identify new opportunities (exploration) and exploiting existing activities leading FB to gain and develop a successful business model across multiple generations [14,24]. As listed above, FB tend to have a risk aversion in order to preserve their SEW. Nonetheless, the founding generations are more interested in exploration than later generations, to preserve the family identity and legacy later generation pursuit more exploitation activities, which are less riskier strategies in contrast to exploration activities [24,25]. Succession is one of the most important topics in the literature regarding FB, it is a great development issue in FB [26]. The succession process represents a highly crucial phase, in this phase there must be a balance between the emotional side of family while making pivotal decisions regarding the future management of the firm shaping the survival of the business into future generations [26]. Like succession, the founder member role in FB determines the values that the company develops, these will be transmitted to future generations of the family and are maintained throughout the life of the business [4,27]. FB companies have a pyramidal structure in which the founder is the reference point during business activity, this is present even when they do not have an active participation within the firm [27].

## 2.2. Innovative Behavior

According to Schumpeter [28] innovation is the creation of new knowledge by combining existing resources and processes. Innovation is a milestone for FB, it is the quintessence element for the firm's long-term success and prosperity as well as a vehicle to make them competitive [40, 43]. The main purpose behind every innovation activity is to invigorate the businesses across the exploration and exploitation of new opportunities [33]. The involvement of the family represents a critical aspect for their running of business, the dimension of SEW represents a key aspect for this firms and has become a mean to explain how these firms differ

in their strategies, goals and their innovative behavior [4,16]. Innovation in FB is seen as strategy to preserve their SEW and remain competitive across multiple generation [34]. Moreover, SEW is a key contribute to understand how family-owned business perceive and approach their innovation strategies [35–37]. Some research has found that the levels of investment in R&D in FB is considerably less than non-FB, this is due to the short-term nature of R&D [17,36]. In R&D long-term investments are more profitable and more stable than short-term investments [17,36]. Thus, FB have a proclivity to investment in longer term R&D investments leading to more stable innovation outputs ,conversely, short-term investments in R&D can produce negative outcomes in SEW in the sense that these are intricate, which may lead the family to adopt riskier strategies that are not accustomed to [17,36]. Family owners and family members in the organization perceive the businesses with a strong emotional connection [4], they also have a very attentive behavior towards the reputation of the firm [38]. The strong emotional attachment extends to the fact that if the firm is facing financial problems the SEW diminishes [12,36,38]. Conversely, the emotional effects of running businesses can lead the family to adopt or reject innovation as a vehicle to their economic growth [39]. Regarding the innovative behavior in FB it is not clear how this firms can remain innovative across multiple generations [32,40]. FB who are owned by multiple family members are more likely to invest less in innovation than those who are owned by a unique element which implies a negative generation-innovation connection [41,42]. Earlier generations are less exposed to conflicts and have a better knowledge of the businesses, they also have a more innovative behavior than future-generations [41,42]. However, some authors found that later-generations have a higher tendency to innovate than earlier generations [37] .

### 3. LESSONS FROM THE PAST

The literature regarding the effect of family involvement in innovation has been of contrast results. Scholars have tried to comprehend and analyse the intricate and multifaceted dimension of innovation in family-owned businesses [36,39,43]. Due to the inconsistency of the results it is difficult to reach a final representation of the state of the art regarding this subject as stated by Calabrò et al., [54]. Nevertheless, FB have unique attributes that enhances their innovative behavior such as their long-term orientation and the family involvement across several generations which promotes their strategies in innovation [54, 55]. On the other hand, due to their more conservative approach [54], risk aversion [14] and control of the company, family involvement [49] might have a negative impact on their innovation strategies. There is a strong emotional attachment in family owned businesses, family owners are perceived as being overly sensitive [26] , according to Bendig et al., [47], higher emotional attachment leads firms to adopt a very conservative approach towards new technological knowledge which ultimately will affect the innovative behavior and the innovation processes. Although the long-term orientation that FB adopt would give them a greater incentive to innovative and to have a more active attitude towards investing in innovation the fact is that the risk aversion they have and the agency costs in family conflict leads them to avoid investing in R&D [16, 28, 45]. Nevertheless, these firms can and have a great efficiency when it comes to implement innovation, meaning that in some cases the innovation output is higher than other firms [43, 45]. The research evidence points to the fact that FB do not have a higher investment in innovation in contrast to non-FB , however, they have the skills to innovate with fewer resources [43, 45, 56]. Moreover, to fully understand the specific and distinctive innovative behavior of FB, variables like innovation output and innovation input do not provide the best foundation [47, 57]. Instead, research needs to focus on different elements, such as their capacity in the decision-making process, the structure that leads them to a better implement their resources and their internal knowledge and capital [45, 46, 58, 59]. Inter generational succession if one the most important aspect in FB it is the source for their prominence on long-

term sustainability instead of short-term [3, 4, 60]. The continuity and durability of FB relies on their aptitude to produce and apply innovation [3, 61]. Innovation is a key feature that distinguishes firms and creates competitive advantages [20, 22]. Innovation has a positively correlation towards performance and growth in FB [24, 63]. Nevertheless, FB have a tendency to avoid risk meaning that they are more risk averse comparing to non-FB [64]. As a result, when taking new challenges and new opportunities they consider not only the financial factors but also the non-financial factors [3, 65]. In order to protect future generation owners of FB tend to have a very restrictive investment strategy, meaning that they develop a more conservative innovation strategy [65, 66], nevertheless, some FB have a very active innovative behavior and are ready to take risks worldwide [42, 63, 67]. The study and understanding of the innovative behavior in family-owned businesses is an important topic of research. More and more, researchers are trying to figure out in which ways FB differentiate from the rest. There is a lack of research on this topic which justifies the make of this theoretical background in the sense that understanding the innovative behavior in family-owned businesses can contribute not only to research but also the applicability that it has, in the sense that can help firms to have a more engagement in their innovation activities and a better understanding in what makes them different from the rest.

#### **4. CONCLUSION**

Innovation is one of the main drivers for the development and sustainability of FB [43]. This process can represent a milestone achievement when it is successful due to the risk and the effort needed to accomplish it [44]. To have an active innovation strategy organizations must be able to change and adapt to new and challenging environments [71]. The choice to innovative is critical for managers and CEOs, business-owning families must take this process into account if they want to achieve a superior competitive advantage and sustainability [29]. Family involvement can impact positively and negatively the innovation process [54]. The great emotional connection with the business, can lead processes like innovation to be hampered [29, 30]. FB managers and owners must separate the relationship between firm and family this can positively impact the innovative behavior [14, 29, 72]. Nevertheless, the literature points to an negative relationship between the presence of family managers and R&D investments [24], although the commitment of family members can have a positive effect on innovation [8]. Looking at the state of the literature it is clear that there is a unanimous opinion that FB are in fact an important element in the world economy [1]. However, there is a fragmentation in the literature in the sense that there is no single definition for FB which can hinder the full understanding of their innovative behavior. To examine and understand the multiple facets of this topic is of must importance.

#### **5. FURTHER RESEARCH**

FB have been a hot topic in the academic community, in recent years there has been a great focus on studying these types of firms. The current state of literature in this field evidences that FB are one of the most important typologies of businesses for the world economy being responsible for most of the Small and Medium sized firms representing a crucial role for regional and social sustainability[43]. This theoretical background yields numerous propositions for the literature on the innovative behavior in FB by taking into account their SEW, early generation versus later generation innovative approach, the effect of family involvement in proactive innovation activities and the effect of family ownership in business strategies and outcomes. SEW is one of the main differentiation elements in FB [14]. The pursue of non-economic goals is a vital aspect to understand the synergy of family ownership on a firm. This concept is also regarded as a mean to highlight and explain their innovative behaviour [14, 47].

There is a lot of research on FB and innovation, however, there is a need to study these firms in new perspective such as their innovative behavior in digital platforms and the relationship between multiple processes like internationalization. By doing so, it could be added to the literature and even create new directories that could help these firms not only in their initial stages to overcome barriers and start their innovative journey. Also following the work of Bendig et al., [47] there can be more avenues of research to draw and expand the concept of board social capital and the relationship it has on family involvement this concept is a valid and concrete vehicle to analyze the innovative behavior of these businesses [47]. Having a full scope approach to analyze and study FB under the innovative behavior can evidence the influence and significance that these businesses have in the economic development and sustainability.

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## LITERATURE:

1. Franz W. Kellermanns, K. A. E. (2004) 'Feding Families: When Conflict Does a Family Firm Good', *Entrepreneurship Theory and Practice*, 28(3), pp. 209–228.
2. Astrachan, J. H. (2010) 'Strategy in family business: Toward a multidimensional research agenda', *Journal of Family Business Strategy*, 1(1), pp. 6–14.
3. Steinerowska-Streb, I. and Wziątek-Staśko, A. (2019b) 'Innovations in FB: a study of owner-managers' knowledge development', *Journal of Family Business Management*, 10(3), pp. 247–264.
4. Beck, L. *et al.* (2009) 'Research on innovation capacity antecedents: distinguishing between family and non-family businesses', pp. 1–29.
5. Becker, S. O. and Egger, P. H. (2013) 'Endogenous product versus process innovation and a firm's propensity to export', *Empirical Economics*, 44(1), pp. 329–354
6. Cleary, P., Quinn, M. and Moreno, A. (2019) 'Socioemotional wealth in FB: A longitudinal content analysis of corporate disclosures', *Journal of Family Business Strategy*, 10(2), pp. 119–132.
7. Seaman, C., McQuaid, R. and Pearson, M. (2017) 'Social networking in family businesses in a local economy', *Local Economy*, 32(5), pp. 451–466.
8. Hasenzagl, R., Hatak, I. and Frank, H. (2018) 'Problematising socioemotional wealth in FB: a systems-theoretical reframing', *Entrepreneurship and Regional Development*, 30(1–2), pp. 199–223.
9. Anderson, R. C. and Reeb, D. M. (2003) 'Founding-Family Ownership and Firm Performance: Evidence from the S&P 500', *Journal of Finance, JSTOR*, 58(3), pp. 1301–1328.
10. Rienda, L., Claver, E. and Andreu, R. (2020) 'Family involvement, internationalisation and performance: An empirical study of the Spanish hotel industry', *Journal of Hospitality and Tourism Management*, 42, pp. 173–180.
11. Claver, E. *et al.* (2008) 'FB' risk perception: empirical evidence on the internationalization process'.
12. Ray, S., Mondal, A. and Ramachandran, K. (2018) 'How does family involvement affect a firm's internationalization? An investigation of Indian FB', *Global Strategy Journal*, 8(1), pp. 73–105.
13. Engeset, A. B. (2020) "“For better or for worse”—the role of family ownership in the resilience of rural hospitality firms', *Scandinavian Journal of Hospitality and Tourism*, 20(1), pp. 68–84.

14. Gómez-Mejía, L. R. *et al.* (2007) 'Socioemotional Wealth and Business Risks in Family-controlled Firms: Evidence from Spanish Olive Oil Mills', *Administrative Science Quarterly*, 52(1), pp. 106–137.
15. Gomez-Mejia, L. R., Makri, M. and Kintana, M. L. (2010) 'Diversification decisions in family-controlled firms', *Journal of Management Studies*, 47(2), pp. 223–252.
16. Gomez-Mejia, L., Cruz, C. and Imperatore, C. (2014) 'Financial reporting and the protection of socioemotional wealth in family-controlled firms', *European Accounting Review*, 23(3), pp. 387–402.
17. Sharma, P. and Sharma, S. (2011) 'Drivers of Proactive Environmental Strategy in FB', *Business Ethics Quarterly*, 21(2), pp. 309–334.
18. Memili, E. *et al.* (2020) 'The interplay between socioemotional wealth and family firm psychological capital in influencing firm performance in hospitality and tourism', *Tourism Management Perspectives*, 34.
19. De Massis, A. *et al.* (2018) 'FB in the global economy: Toward a deeper understanding of internationalization determinants, processes, and outcomes', *Global Strategy Journal*, 8(1), pp. 3–21.
20. Kotlar, J. and Chrisman, J. J. (2019) 'Point: How Family Involvement Influences Organizational Change', *Journal of Change Management*, 19(1), pp. 26–36
21. Memili, E. *et al.* (2018) 'Sustainability practices of FB: the interplay between family ownership and long-term orientation', *Journal of Sustainable Tourism*, 26(1), pp. 9–28.
22. Ramalho, J. J. S., Rita, R. M. S. and da Silva, J. V. (2018) 'The impact of family ownership on capital structure of firms: Exploring the role of zero-leverage, size, location and the global financial crisis', *International Small Business Journal: Researching Entrepreneurship*, 36(5), pp. 574–604.
23. Li, Z. and Dasgupta, J. J. (2016) 'Understanding family firm innovation heterogeneity: A typology of family governance and socioemotional wealth intentions', *Journal of Family Business Management*, 6(2), pp. 103–121.
24. Kotlar, J. *et al.* (2014) 'Profitability goals, control goals, and the R&D investment decisions of family and nonFB', *Journal of Product Innovation Management*, 31(6), pp. 1128–1145.
25. Wiseman, R. M. and Gomez-Mejia, L. R. (1998) 'A behavioral agency model of managerial risk taking', *Academy of Management Review*, 23(1), pp. 133–153.
26. Le Breton-Miller, I. and Miller, D. (2009) 'Agency vs. stewardship in public FB: A social embeddedness reconciliation', *Entrepreneurship: Theory and Practice*, 33(6), pp. 1169–1191
27. Camisón-Zornoza, C. *et al.* (2020) 'Effects of ownership structure and corporate and family governance on dynamic capabilities in FB', *International Entrepreneurship and Management Journal*, 16(4), pp. 1393–1426.
28. Chrisman, J. J. and Patel, P. C. (2012) 'Variations in R&D investments of family and nonFB: Behavioral agency and myopic loss aversion perspectives', *Academy of Management Journal*, 55(4), pp. 976–997.
29. Hauck, J. and Prügl, R. (2015) 'Innovation activities during intra-family leadership succession in FB: An empirical study from a socioemotional wealth perspective', *Journal of Family Business Strategy*, 6(2), pp. 104–118.
30. Gomez-Mejia, L. R. *et al.* (2011) 'The Bind that ties: Socioemotional wealth preservation in FB', *Academy of Management Annals*, 5(1), pp. 653–707.
31. Gallo, M. A. and Sveen, J. (1991) 'Internationalizing the Family Business: Facilitating and Restraining Factors', *Family Business Review*, 4(2), pp. 181–190.
32. Davis J.A. and Tagiuri, R. (1991) 'Bivalent attributes of the family firm', *Family Business Sourcebook*.

33. Dyer W, G. (2006) ‘Examining the “ Family Effect ” on Firm Performance’, *Family Business Review*.
34. Vrontis, D. *et al.* (2019) ‘Entrepreneurial exploration and exploitation processes of family businesses in the food sector’, *British Food Journal*, 121(11), pp. 2759–2779.
35. March, J. G. (1991) ‘Exploration and Exploitation in Organizational Learning’, *Organization Science*, 2(1), pp. 71–87.
36. Le Breton-Miller, I., Miller, D. and Lester, R. H. (2011) ‘Stewardship or Agency? A Social Embeddedness Reconciliation of Conduct and Performance in Public Family Businesses’, *Organization Science*, 22(3), pp. 704–721
37. Peters, M. (2005) ‘Succession in tourism family business: The motivation of succeeding family members’, *Tourism Review*, 60(4), pp. 12–18.
38. Presas, P., Muñoz, D. and Guia, J. (2011) ‘Branding familiness in tourism FB’, *Journal of Brand Management*, 18(4–5), pp. 274–284.
39. Schumpeter, J. A. (2010) *Capitalism, socialism and democracy*, *Capitalism, Socialism and Democracy*.
40. Kraus, S. *et al.* (2016) ‘Family firm internationalization: A configurational approach’, *Journal of Business Research*, 69(11), pp. 5473–5478.
41. Pukall, T. J. and Calabrò, A. (2014) ‘The Internationalization of FB: A Critical Review and Integrative Model’, *Family Business Review*, 27(2), pp. 103–125.
42. Eddleston, K. A. *et al.* (2012) ‘The Succession Process from a Resource- and Knowledge-Based View of the Family Firm’, *Family Business Review*, 2(1), pp. 328–353.
43. Duran, P. *et al.* (2016) ‘Doing more with less: Innovation input and output in FB’, *Academy of Management Journal*, 59(4), pp. 1224–1264.
44. Ireland, R. D., Covin, J. G. and Kuratko, D. F. (2009) ‘Conceptualizing corporate entrepreneurship strategy’, *Entrepreneurship: Theory and Practice*, 33(1), pp. 19–46.
45. Rondi, E., De Massis, A. and Kotlar, J. (2019) ‘Unlocking innovation potential: A typology of family business innovation postures and the critical role of the family system’, *Journal of Family Business Strategy*, 10(4).
46. Frattini, F. and Massis, A. De (2016) ‘Family-Driven Innovation: Resolving the Ability and Willingness Paradox to Unlock the Innovation Potential of FB’, *European Business Review*.
47. Bendig, D. *et al.* (2020) ‘The Effect of Family Involvement on Innovation Outcomes: The Moderating Role of Board Social Capital’, *Journal of Product Innovation Management*, 37(3), pp. 249–272.
48. Zahra, S. A. (2003) ‘International expansion of U.S. manufacturing family businesses: The effect of ownership and involvement’, *Journal of Business Venturing*, 18(4), pp. 495–512.
49. Berrone, P., Cruz, C. and Gomez-Mejia, L. R. (2012) ‘Socioemotional Wealth in FB: Theoretical Dimensions, Assessment Approaches, and Agenda for Future Research’, *Family Business Review*, 25(3), pp. 258–279.
50. Filser, M. *et al.* (2018) ‘Tracing the Roots of Innovativeness in Family SMEs: The Effect of Family Functionality and Socioemotional Wealth’, *Journal of Product Innovation Management*, 35(4), pp. 609–628.
51. Duran, P., Kammerlander, N. and Essen, M. Van (2010) ‘Doing more with less- Innovation input and output in FB’, *Academy of Management Journal*, 59(4), pp. 1224–1264.
52. Block, J. H. (2012) ‘R&D investments in family and founder firms: An agency perspective’, *Journal of Business Venturing*, 27(2), pp. 248–265.
53. Hillebrand, S., Teichert, T. and Steeger, J. (2020) ‘Innovation in FB: An Agency and Resource-Based Lens on Contingencies of Generation and Management Diversity’, *British Journal of Management*, 31(4), pp. 792–810.
54. Calabrò, A. *et al.* (2019) ‘Innovation in FB: A Systematic Literature Review and Guidance for Future Research’, *International Journal of Management Reviews*, 21(3), pp. 317–355



55. Dibrell, C., Davis, P. S. and Craig, J. (2008) 'Fueling innovation through information technology in SMEs', *Journal of Small Business Management*, 46(2), pp. 203–218.
56. Alfredo De Massis *et al.* (2018) 'Innovation with Limited Resources: Management Lessons from the German Mittelstand', *Journal of Product Innovation Management*.
57. Patel, P. C. and Cooper, D. (2014) 'Structural power equality between family and non-family TMT members and the performance of FB', *Academy of Management Journal*, 57(6), pp. 1624–1649.
58. Nieto, M. J. and Rodríguez, A. (2012) 'The internationalization of knowledge-intensive business services: The effect of collaboration and the mediating role of innovation', *Service Industries Journal*, 32(7), pp. 1057–1075.
59. Penney, C. R. and Combs, J. G. (2013) 'Insights From Family Science: The Case of Innovation', *Entrepreneurship: Theory and Practice*, 37(6), pp. 1421–1427.
60. Mandl, I. and Obenaus, S. (2008) 'Overview of Family Business Relevant Issues', *Final Report, Austrian Institute for SME Research, Vienna.*, p. 169.
61. Erdogan, I., Rondi, E. and De Massis, A. (2020) 'Managing the Tradition and Innovation Paradox in FB: A Family Imprinting Perspective', *Entrepreneurship: Theory and Practice*, 44(1), pp. 20–54.
62. Kammerlander, N. *et al.* (2015) 'The Impact of Shared Stories on Family Firm Innovation: A Multicase Study', *Family Business Review*, 28(4), pp. 332–354.
63. Kellermanns, F. W. *et al.* (2012) 'Innovativeness in FB: A family influence perspective', *Small Business Economics*, 38(1), pp. 85–101.
64. Hiebl, M. R. W. (2012) 'Peculiarities Of Financial Management In FB', *International Business & Economics Research Journal (IBER)*, 11(3), p. 315.
65. Classen, N. *et al.* (2014) 'Innovation in family and non-family SMEs: An exploratory analysis', *Small Business Economics*, 42(3), pp. 595–609.
66. Steinerowska-Streb, I. and Wziątek-Staško, A. (2019b) 'Innovations in FB: a study of owner-managers' knowledge development', *Journal of Family Business Management*, 10(3), pp. 247–264.
67. Sundbo Jon, Orfila-Sintes Francina and Sørensen Flemming (2007) 'The innovative behavior of tourism firms - Comparative studies of Denmark and Spain', *Research Policy*, 36(1), pp. 88–106.
68. Porter, M. E. (1990) 'Competitive Advantage of Nations: Creating and Sustaining Superior Performance', *Strategic Management*, p. 896.
69. Kraus, S., Pohjola, M. and Koponen, A. (2012) 'Innovation in FB: An empirical analysis linking organizational and managerial innovation to corporate success', *Review of Managerial Science*, 6(3), pp. 265–286.
70. De Massis, A. *et al.* (2015) 'Product innovation in family versus nonFB: An exploratory analysis', *Journal of Small Business Management*, 53(1), pp. 1–36.
71. O'Reilly, C. A. and Tushman, M. L. (2008) 'Ambidexterity as a dynamic capability: Resolving the innovator's dilemma', *Research in Organizational Behavior*, 28, pp. 185–206.
72. Gottardo, P. and Maria Moisello, A. (2014) 'The capital structure choices of FB: Evidence from Italian medium-large unlisted firms', *Managerial Finance*, 40(3), pp. 254–275
73. Penney, C. R. and Combs, J. G. (2013) 'Insights From Family Science: The Case of Innovation', *Entrepreneurship: Theory and Practice*, 37(6), pp. 1421–1427.

## THE BULGARIAN MODEL OF THE PROSECUTOR'S OFFICE AND THE POSITION OF THE PROSECUTOR GENERAL

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### ABSTRACT

*The independence of the Prosecutor General of any Member State of the European Union is extremely important with a view to comply with the legal framework and the rule of law. It lays the foundations of trust in the judiciary and the fundamentals of statehood, creates a sense of law and legal order. That is why it is highly important in the context of the present to outline the control of the activity of the Prosecutor General in the exercise of his powers, clearly emphasizing that the Bulgarian Prosecutor General is not out of control in his powers. The legal powers of the Prosecutor General of the Republic of Bulgaria are even more limited than the powers of analogous figures in the legal systems of other EU countries. The Prosecutor General exercises his powers only in exceptional cases and according to previously prescribed legal procedures.*

**Keywords:** *Prosecutor's Office of the Republic of Bulgaria (PORB), Results, Combating Crime, Trends*

### 1. INTRODUCTION

The protests in Bulgaria are interesting phenomena and in principle they should be aimed at demands and intensions for something better, something different and tending to achieve a development of the public relations in a specific direction. Our recent and more distant history abounds of facts and circumstances presenting multiple examples for the consciences of such activities or inactions. We often search and find the guiltiness within the others and nor in ourselves at all. It is a common characteristic of Bulgarians that they are used to make evaluation and qualifications without any competences for that, neither any experience in the specific subject of matter. We are witnessing of a similar phenomenon in the last months – the idea of protesting or expressing our personal opinion, which is really positive, itself for a democratic and developed society, what we are pretending to be. The tensions, the wishes and strivings following our daily routine are surely affecting all parts of our prosaic and daily life. It is basic and fundamental for each of us to strive a better way of life and to be part of the community, which is at maximum fair to ourselves and others. The feeling of satisfaction and equality are basic principles that are of great importance for the human-being and if some

actions are satisfying myself, for the people around me it could be to some extent or at all unsatisfactory (Terziev, Georgiev, Bankov, 2020). The achievement of appropriate and right decisions in the context of a crisis situation is a really difficult mission, which is experiencing the need of high quality expertise and a good reaction in such circumstances. We are in the middle of such crisis situation at the moment. Without trying to make a defined analysis about the reasons predispose it, it is obvious that the situation is happening and that it is happening in a way that provokes discomfort for its participants. An interesting point is the environment, moreover the circumstances around the Bulgarian Prosecutor's Office; at least because of the requirements for the Prosecutor's Office which are too high, or even out of the competences of the institution. Unfortunately, the society is critical enough and is directing task, expectations and is striving for responsibilities, which are legally not of the competence of the institution. Moreover, this makes the Prosecutor's Office to search other possibilities for answering these expectations, without violating the rule of law. In case, when this opportunity is namely the providing more and reliable information, some of us are reacting as its role is as a political speaker or media spectrum. In opposite, if there is a lack of such information – it looks like that the institutions are not well working and inactive (Terziev, Georgiev, Bankov, 2020a). Undoubtedly, the persons themselves are defining also part of the look of the specified body or organization and that is more than logical. If we like that or not is a question of personal acceptance and self-feeling but surely it is a characteristic of the individual behavior. Paradoxically in this specific situation is that namely the protesters for human rights and freedom are using such methods and tools violating the fundamental human rights. When we are “searching” and “striving” a just society, the rules must be basic for the formation of this society and its public development, whose destruction is not of interest of nobody. Without any evaluations and characteristics of specific personal positions it is needed to be mentioned that the protection of the rules – legal, moral and generally speaking those, which are guarantee for the normal flow of the social processes, it is obligatory and to the extend satisfying the expectations of the participants in this process (Terziev, Georgiev, Bankov, 2020a). The features of this change of that social process are common and well-known to economists, jurists, sociologist and analyzers – namely the use of enough free media scene for presenting information not corresponding to the actual facts and events. Undoubtedly, within this crisis situation the discrediting individuals is easy and quick approach. And without knowing in personal the Prosecutor General of the Republic of Bulgaria it could be given as a good example for the fact that we are aware of so much personal information about his private life, bank accounts and even about his educational development. Some of you will say that this action is absolute rightful in accordance with the social status of the person working for the benefit of the society. Partially, those of you will be right only with regards to the fact that to be informed is an important right but not in relation to the opportunity for misinterpretations, explanations and malicious hints (even if we are not searching it, it is all over the internet). And without being defenders it should be noted that academic experience and the academic PHD honor is a process and good opportunity for upgrading personal competences. If this is the decision of an individual, even when he is a prosecutor general of the Republic of Bulgaria, it should be admired. Just to remind you that with this regard there are accredited universities, Law of development of human resources, Regulations and other documentation, regulating this process and in case we are not supporting this or we have any counterclaims to this process, we should change the regulation itself or should impose some criteria (Terziev, Georgiev, Bankov, 2020; 2020a). Backwards to the procedure, which we wants so much to be followed. We cannot be a judge of whether an individual is successfully or not coping with his or her official duties but if we would like at least to go further in our social development, so the following of rules is the base of it. When we strive for resignations and when we are reaching out personal fairness, we should be led by the rules.

The opinion of the protesters could not be evaluated as objective but it is real and possible. And when it exists, it should be answered convincing us in the trueness that we are doing it in favor of the country. And when the powers of this prosecutor general seem to us very much or his actions not fair enough, we must again follow the rules to change or put in such a way that they are clear enough, accurate and under public control. Otherwise, everything else speaks of processes of frantic desires that we want to happen outside the rules, and we will let the rules apply after that.

## **2. COMPARATIVE LEGAL RESEARCH OF THE FUNCTIONS, NOMINATION PROCEDURES AND PROFILES OF THE PROSECUTORS GENERAL IN THE MEMBER STATES OF THE EUROPEAN UNION**

One comparative legal research of the functions, procedures for nomination and the profiles of the prosecutors general in the Member states, observing the timeframe from November 2018 - January 2019 and team of: Dr. Ivanka Ivanova (project manager, author), Georgi Angelov (expert, data collector) and Dr. Yani Kirov (expert, data collector) and is funded by the project “What do we (not) know about the prosecutors general in the EU Member States?”. The Ministry of the Foreign Affairs of the Netherlands gives some interesting interpretations about specifications of the Bulgarian model. This research is, of course, trying analytical and comparative analysis but could not be accepted as a complex because of multiple reasons (Terziev, Georgiev, Bankov, 2020; 2020a; 2020b; 2020c). In the Bulgarian Constitution of 1991, the issues of the status and organization of the Prosecution are settled together with those of the court in chapter “Judiciary”, but the Prosecution as a structure has retained the two main characteristics it had in the totalitarian state: individual prosecutors do not return to the composition of the courts (as it was until 1947), and remain in an independent structure parallel to that of the courts. While the Prosecution in most EU Member States is a body specialized exclusively in the field of criminal law, the Bulgarian Prosecutor's Office retains the function of general supervision of legality (Article 127, items 5 and 6 of the Constitution) (2020d). The appointments, career development and discipline of judges, prosecutors and investigators are regulated in the Constitution and the law in an identical way i.e. prosecutors and investigators have the statute of irremovability as that for judges and the same guarantees of independence as them. The personnel matters of the three magistrates' professions are decided by a separate collective body - the Supreme Judicial Council, which until 2015 functioned as one college body, and then two separate colleges were formed: Judicial College, which is responsible for appointments, discipline and career development of judges, and the Prosecutorial College - which resolves the same issues for prosecutors and investigators. In the other Member States of the European Union, the appointment and career development of prosecutors are usually regulated differently from those of judges, and appointments, especially of prosecutors, in the majority of Member States are made by a single body (Minister of Justice or Head of State). In Bulgaria the case is special because, on the one hand, the Prosecutorial College of the Supreme Judicial Council as a collective body appoints prosecutors, the Plenum of the Supreme Judicial Council as a collective body elects a candidate for prosecutor general, and then it reports on the organization's activities to a collective body the National Assembly and may be removed by the President only on the initiative of collective bodies the Supreme Judicial Council or the National Assembly. However, the collective bodies themselves do not bear any responsibility for their decisions, and by definition they act more slowly and with difficulty than the individual ones. Conversely, entrusting the procedure for appointing prosecutors and appointing or dismissing the Attorney General to sole bodies, which is the most common model in the other Member States of the European Union, serves as a guarantee for the efficiency and accountability of the Prosecution itself. There is no much about the role of the prosecutor general in the Bulgarian constitution: like the presidents of the Supreme Court of Cassation and the Supreme

Administrative Court, the prosecutor general is appointed by the president on proposal of the Supreme Judicial Council; with a 7-year term and is not subject to re-election according to Article 126, para. 2 of the Constitution, his main function is to supervise the legality and methodological guidance of the activities of all prosecutors. The Bulgarian Prosecutor General is accountable to the National Assembly for the activity related to criminal investigation and prosecution. On a proposal of a quarter of MPs, the Parliament can initiate a removal procedure for the Prosecutor General, for which a decision is required by a qualified majority of 2/3. The matter of the removal of the chairmen of the two supreme courts is settled in the same way. The Bulgarian legislature has provided guarantees for the independence of the prosecutor general from political power, which are the same as those of the chairmen of the two supreme courts. The Bulgarian Prosecutor General is by right a member of the Supreme Judicial Council and after 2015 he is by right Chairman of the Prosecutorial College of the Supreme Judicial Council. Five of the members of the Prosecutorial College of the Supreme Judicial Council are subordinate to the Prosecutor General, which gives him great power in resolving issues related to the appointment and career development of prosecutors. In addition to the Prosecution, the Bulgarian Prosecutor General also heads the National Investigation Service and may delegate investigations to it at his own discretion. All specialized units of the Prosecutor's Office are subordinate to the Prosecutor General and, at his discretion, may set up special teams to investigate certain crimes. He may amend or revoke the acts of all prosecutors in the country, he may also, on his own decision, second prosecutors. In summary of this comparative analysis and based on the actual situation, it can be argued that a sufficiently objective mechanism for selection and control in Bulgaria has been created to meet the respective needs. Whether this mechanism works effectively and transparently is a matter for another type of analysis and assessment. Nevertheless, Bulgaria is not particularly different from the accepted European practice, and this is an objective right with its functional significance of the Bulgarian legislator.

### **3. THE CASE OF KOLEVI V. BULGARIA, ON APPEAL №1108 / 2002 IN THE EUROPEAN COURT OF HUMAN RIGHTS**

An interesting example in this direction is the case of Kolevi v. Bulgaria, on appeal №1108 / 2002, fifth Chamber, chaired by Peer Lorenzen at the European Court of Human Rights. The specific factual circumstances are as follows: The case is on an appeal (№ 1108/02) against the Republic of Bulgaria, filed in the Court on 17 December 2001 on the grounds of Article 34 of the Convention for the Protection of Human Rights and Fundamental Freedoms (the “Convention”) by Nikolay Georgiev Kolev, a Bulgarian citizen born in 1949. Mr Kolev was shot dead on 28 December 2002 (2020d). His wife, Ms Nanka Koleva, his daughter, Ms Hristina Koleva, and his son, Mr Georgi Kolev, stated that they intended to continue the proceedings on the complaint, as well to submit additional complaints. “The applicants alleged, in particular, that Mr Kolev's detention in 2001 had been unlawful and unjustified, that his complaints against his detention had not been considered in due time, and the investigation of the first applicant's murder had not been independent and effective”. By decision of 4 December 2007, the Court declared the appeal partly admissible and in part inadmissible. The applicable domestic law is as follows (2020d):

- Detention without a judicial warrant
  - Article 202, para. 1 and Article 203 of the Penal Procedure Code of 1974 (“PPC 1974”), which was in force at the time, provide that a suspect may be detained without charge for up to 72 hours with a prosecutor's decision.
  - Article 152a of the 1974 PPC provides that a person who has been formally charged with a criminal offense may be detained temporarily for a period of up to 72 hours by a prosecutor's decision. Within this period, the accused must be brought before a court;

- There is no data on the existence of internal court practice on the issue of whether the 72-hour terms for detention under Article 202 and Article 152a may or may not be sequential.
- Moving complaints against detention on remand
  - According to Article 152b of the 1974 PPC, in force at the time, appeals against detention must be lodged with the relevant investigator or prosecutor, who has the obligation to send them “immediately” to the competent court. The court must hold a hearing on the case within three days of receiving the appeal.
- Prosecutorial immunity and procedure for bringing criminal charges against prosecutors
  - All judicial officials, including prosecutors, enjoyed immunity against prosecution until September 2003. According to Article 132 of the Constitution, in force until September 2003, in connection with Article 70, criminal proceedings against prosecutors may be initiated only if their immunity is removed by a decision of the Supreme Judicial Council. The Judiciary Act of 1994 (section 27 (1) (6) and section 134 (3) states that the power to make proposals to the Supreme Judicial Council to remove the immunity of a judicial official is conceded to the Prosecutor General.
  - As the immunity can only be lifted upon a proposal of the Prosecutor General, which means that it is not possible to lift the immunity of the Prosecutor General against his will, in 1998 the National Assembly amended the Judiciary System Act of 1994 and empowered the Chairmen of the Supreme Court of Cassation and of the Supreme Administrative Court as well the Minister of Justice to submit a proposal to the Supreme Judicial Council for waiving the immunity of each judicial official. On 14 January 1999 the Constitutional Court declared the amendment unconstitutional, concluding that it violated Article 127, paragraph 1 of the Constitution, which gives the Prosecution authorities the exclusive power to bring charges and lead the prosecution against criminal suspects (decision № 1, constitutional case № 34/1998).
  - In June 2002, the National Assembly adopted a new amendment aimed at eliminating the shortcomings in the law. During the debate on the amendment, several MPs considered it unconstitutional, given the decision of the Constitutional Court in 1999, and expressed the opinion that the shortcoming is derived from the text of the Constitution and can be eliminated only after an amendment to the Constitution. However, Parliament adopted a text according to which one-fifth of the members of the Supreme Judicial Council could propose to the entire Council the waiver of the immunity of any judicial official.
  - On 16 December 2002, the Constitutional Court rejected the amendment (decision №1, constitutional case № 17/2002), citing the reasons set out in its ruling dated 1999. The Constitutional Court did not give an opinion on the question whether the ensuing impossibility to waive the immunity of the Prosecutor General is compatible with the constitutional principle of legality, as well as with the fundamental rights protected by the Constitution.
  - The shortcoming was eliminated as of September 30, 2003, after the National Assembly amended the Constitution and introduced, by virtue of Article 132, para. 4, the possibility for one fifth of the members of the Supreme Judicial Council to refer to the entire Council, which has the right to make a decision for bringing charges and detention of each judicial official. In addition, with the amendment, Article 132 of the Constitution no longer uses the term “immunity” and limits the number of cases in which permission from the Supreme Judicial Council is required. According to the amended text, such prior authorization is only necessary for bringing charges against judges and prosecutors when the charges are for crimes committed by them in the performance of their official duties.

Obtaining such permission is also necessary for the issuing of detention orders for judges and prosecutors, regardless of the nature of the charges in respect of which detention is sought. The Judiciary System Act was amended as of April 9, 2004 to reflect the new constitutional provisions.

Following the above amendments, in theory, any prosecutor or investigator could bring charges against the Prosecutor General without the need for prior authorization in the case of a crime not related to the latter's official duties. However, the Prosecutor General could overturn any such decision taken by a subordinate prosecutor or investigator. Also, the permission of the Supreme Judicial Council to detain the Prosecutor General remains necessary.

A further amendment to the Constitution of February 2007 removed all procedural restrictions on the prosecution of judicial officials. The new Judiciary System Act of 2007 reflects this change in its provisions. Since February 2007, in theory, any prosecutor or investigator has the right, without prior authorization, to bring charges against the Prosecutor General, or to request a pre-trial detention order from the relevant court when there is sufficient information that he may have committed a crime. As mentioned above, however, the Prosecutor General may overturn any such decision taken by a subordinate prosecutor or investigator.

- The prosecutor's office. Appointment, mandate, dismissal and suspension of judicial staff in general, and of the Prosecutor General in particular
  - According to the 1991 Constitution, all prosecutors have the status of judicial officers (magistrates), and are thus part of the judiciary. After three years of service, they receive a mandate. The appointment and dismissal of judicial officers is possible only by a decision of the Supreme Judicial Council (see paragraphs 136 and 137 below). The Prosecutor General, who is also a judicial officer, is appointed by the President of the Republic of Bulgaria on the proposal of the Supreme Judicial Council for a single seven-year term. Prior to the expiry of his term of office, the same grounds for removal apply to him as to all other judicial officers. He may be removed by the President of the Republic of Bulgaria on the proposal of the Supreme Judicial Council.
  - According to Article 129 of the 1991 Constitution, in force as of 30 September 2003, judicial officers with a mandate, including prosecutors, may be dismissed only by retirement, in cases of permanent physical incapacity, or when they are sentenced to imprisonment after the final entry into force of a sentence on charges of intentional commission of a crime.
  - Since 30 September 2003, when the Constitution was amended, removal is possible in case of “serious breach or systematic failure to perform the duties of a judicial officer” and in cases of “acts detrimental to the reputation of the judiciary”. In 2006, the National Assembly adopted an amendment to the Constitution, according to which not only the Supreme Judicial Council but also two-thirds of parliament members can propose to the President to remove the Prosecutor General or the Presidents of the two Supreme Courts for the reasons mentioned above.

On 13 September 2006, the Constitutional Court annulled the amendment, ruling that it aimed to change the balance between the various authorities, and that the Constitution required such changes to be made by the Grand National Assembly. Several judges differ and believe that the change is necessary because the current legal regime does not offer sufficient guarantees against illegal actions committed by senior prosecutors or judges. In his dissenting opinion, one of the judges noted the following: “Given the fact that the Supreme Judicial Council includes members who are subordinate to (the Prosecutor General and the Presidents of the two Supreme Courts) or are in friendly

relations with them, it is very likely that the Supreme Judicial Council will not be able to form a majority in support of the dismissal of these three high-ranking judicial officials despite the violations of the law committed by them....”. Prior to the (rejected constitutional amendment), the domestic legal order was helpless in such situations and the illegal conduct of judicial staff had to be endured for long periods. Tolerating lack of control and accountability is contrary to the spirit of the Constitution. “Unfortunately”, as a result of (the majority decision in the present case), control over the activities of senior judicial officials will continue to be ineffective, as it is exercised by themselves and their subordinates.

- Under the Judiciary Act 1994 (section 40) and the Judicial Systems Act 2007 (section 230), the Supreme Judicial Council has the right to remove from office any judicial officer against whom criminal charges have been brought.
- Powers of the Prosecutor General
  - The system of the Prosecutor's Office in the Republic of Bulgaria is centralized. All prosecutors are subordinate and accountable to the Prosecutor General (section 112 of the Judicial Systems Act 1994 in force until 2007, and section 136 of the Judiciary Act 2007).
  - The Prosecutor General, as the highest-ranked prosecutor in the hierarchy, has the right to issue mandatory orders concerning the work of each prosecutor, including the work in specific cases, or to take over the work in a case in which another prosecutor works (section 116 of the Judicial Systems Act 1994, in force until 2007, and sections 139 and 143 of the Judicial Systems Act 2007).
  - The Prosecutor General has the right to submit to the Supreme Judicial Council proposals for the promotion, dismissal or disciplinary sanction of prosecutors (paragraphs 27, 30 and 172 of the Judicial Systems Act 1994, in force until 2007, and paragraph 38 and 312 of the Judicial Systems Act 2007).
  - Under the 1974 PPC, in force until 2006, the prosecutor controlled the investigation (Article 48 § 3 of the 1974 PPC). This includes the right to give specific instructions, to change the investigator, or to take over the entire investigation (Article 176, paragraph 1 of the same Code). The 2006 PPC strengthens prosecutorial control and his direct involvement in the investigation of crimes. Furthermore, as a result of constitutional and legislative changes of 2006, 2007 and 2009, the investigative services were integrated into the prosecution offices, and for the moment they are administratively subordinate to the Prosecutor General (Articles 127 and 128 of the Constitution of the Republic of Bulgaria and Articles 136, 148 - 153 of the Judicial Systems Act of 2007). In 2009, the Constitutional Court rejected a proposal to declare as unconstitutional the amendments to the Judiciary Act 2009 that regulate this subordination.
- The Supreme Judicial Council
  - The Supreme Judicial Council has 25 members. The Chairmen of the Supreme Court of Cassation and the Supreme Administrative Court and the Prosecutor General are ex officio members. Parliament elects eleven members, who may be judges, prosecutors, investigators and lawyers. The remaining eleven members are elected at separate meetings by delegates of judges (elect six members), prosecutors (elect four members) and investigators (elect one member) (Article 130 of the Constitution of the Republic of Bulgaria, paragraphs 17-20 of the Judicial Systems Act from 1994, in force until 2007, and paragraphs 17 and 20-26 of the Judicial Systems Act of 2007).
  - Decisions concerning, inter alia, to the dismissal of a judicial officer or a proposal to the President of Bulgaria of removal the Prosecutor General shall be taken by the members of the Supreme Judicial Council by secret ballot. Until September 2003, when Article



131 of the Constitution was changed, this was not the case, as regards the decisions to waive the immunity of judicial officers of the prosecution office, which were taken by a procedure of open voting. Between September 2003 and February 2007, these decisions also had to be taken by secret ballot. Since February 2007, the permission of the Supreme Judicial Council has no longer been required to bring charges of any kind against a judicial officer (see § 127 above) (2020d).

The decision in these proceedings is as follows (2020d):

- Assume that the widow and children of the first applicant are in a position to continue the proceedings instead of him;
- Accepts that a violation of the right of the first applicant has been committed according to Article 5, paragraph 3 of the Convention to be brought promptly before a judge or other official authorized by law to perform judicial functions;
- Assume that the first applicant's deprivation of liberty between 13 September and 29 November 2001 was unlawful and contradict to Article 5, paragraph 1 of the Convention;
- Accepts that it is not necessary to consider separately the complaint under Article 5, paragraph 3 of the Convention, in the sense that the first applicant's deprivation of liberty was unjustified and had lasted too long;
- Assume that there has been a violation of the first applicant's right under Article 5, paragraph 4 of the Convention that the complaint against detention to be dealt with promptly;
- Accepts that a violation of Article 2 of the Convention, consisting in the fact that the investigation into the murder of Mr Kolev had been ineffective and the necessary independence was lacking;
- Accepts that the respondent State must pay the relevant taxes, such as non-pecuniary damage, as well as the costs and expenses;
- Dismisses the remainder of the applicants' claim for righteous satisfaction.

#### 4. CONCLUSION

The independence of the Prosecutor General of any Member State of the European Union is extremely important with a view to comply with the legal framework and the rule of law. It lays the foundations of trust in the judiciary and the fundamentals of statehood, creates a sense of law and legal order. That is why it is highly important in the context of the present to outline the control of the activity of the Prosecutor General in the exercise of his powers, clearly emphasizing that the Bulgarian Prosecutor General is not out of control in his powers. The legal powers of the Prosecutor General of the Republic of Bulgaria are even more limited than the powers of analogous figures in the legal systems of other EU countries. The Prosecutor General exercises his powers only in exceptional cases and according to previously prescribed legal procedures (Terziev, Georgiev, Bankov, 2020e; 2020f). The Prosecutor General of the Republic of Bulgaria provides methodological guidance on the activities of all prosecutors and investigators (Article 136, para. 5 of Judicial Systems Act (In 2016 (issue 62/2016, in force from 09.08.2016) Article 136 of the Judicial Systems Act was amended, according to whose new wording (corresponding to Article 126 of the Constitution of the Republic of Bulgaria) the Prosecution is united body and its structure corresponds to that of the courts'. With the change of this norm the centralization in the system of the Prosecutor's office ended. This idea has been realized not only through an editorial change (dropping the word “centralized”), but also finds expression in the provisions of Article 136, para. 3 of the Law on the Judiciary, which stipulates that prosecutors and investigators are guided by the administrative heads of the respective Prosecutor's office and of Article 136, paragraph 5 of the Law on the Judiciary (former paragraph 6), which provides that the Prosecutor General supervises the legality and

methodological guidance of the activities of all prosecutors and investigators for accurate and equal application of laws and protection of legal rights and interests of citizens, legal entities and the state. I.e. the administrative guidance in the prosecution system is clearly limited horizontally by the methodological guidance vertically), analogy Article 46, para. 5 of Criminal Procedure Code) for accurate and equally application of the laws and protection of the legal rights and interests of the citizens, legal entities and the state, through the issuance of common methodological instructions and directions regarding the activity of the Prosecution (power under Art. 138, para. 1, item 6 of Law on the Judiciary). The acts cited in support of the allegation are general. It should be noted that they relate generally to the activities of all prosecutors and investigators, have the character of recommendations that create organizational prerequisites and contain methodological guidelines for the proper application of the law. Due to these general methodological guidelines, containing directions for the same type of cases used (most often in case of legislative changes), there is the possibility of applying the norm by all prosecutors equally and fairly (Terziev, Georgiev, Bankov, 2020g; 2020h). It is clear that the methodological guidelines and directions, as general and principled, aim to promote professional development and at the same time to support the separate and independent exercise of the prosecutorial activity. The claims of various subjects that they are specific are not only untenable, but lead to the conclusion of ignorance of the regulations. All instructions do not concern a separate and specific case. It is for this reason that the recommendation of the experts, who performed an independent analysis of the structural and functional model of the Bulgarian Prosecutor's Office, is that they be publicly available, as long as this does not conflict with the effectiveness of the investigation in relation to prosecution and national security. The trend over the last year and a half, which has been undertaken by the Prosecutor General of the Republic of Bulgaria to publish more such acts, leading to a fuller transparency of cases in which the Prosecutor General himself has exercised his powers of methodological guidance, implements the recommendation and is a sign to the Bulgarian society for a clearly expressed will and firm position on transparency and control of the activity of the Prosecution, insofar as this does not pose a threat to national security and/or would vitiate an investigation in various cases. The actions of the Prosecutor General of the Republic of Bulgaria are also related to the exercise of legally regulated powers and control of lawfulness in specific cases, as expressly provided by law (for example Article 243, paragraph 10 of the Criminal Procedure Code, the requests for reopening of criminal cases under Chapter Thirty-three of the Criminal Procedure Code, etc.) (Terziev, Georgiev, Bankov, 2020e; 2020f; 2020g; 2020h). Generally speaking, if the Prosecutor General commits a crime, he cannot remain “anonymous”. It is considered that proclaiming the untruth about the untouchability of the Prosecutor General in a state governed by the rule of law, it is also worrying that in practice this puts unacceptable pressure on the Prosecution, which will not be exaggerated if it is qualified as motivational violence vis compulsive - especially against the Prosecutor General himself. As the current Prosecutor General is the first Prosecutor General from practice, he is aware of the need for legislative changes and interpretative decisions that ensure a unified standard in the resolution of cases. It is necessary to unify the practice between the Prosecution and the Court, in order to ensure effective criminal proceedings and fair sentences.

#### LITERATURE:

1. Terziev, V., Georgiev, M., Bankov, S. (2020). *Functions, rights and obligations of the “Expert Council” of the prosecutor general of the Republic of Bulgaria.* // International scientific journal “Internauka”, Kiev, Ukraine, № 14(94), 2020, 2 т., pp. 28-29, ISSN 2520-2057.

2. Terziev, V., Georgiev, M., Bankov, S. (2020a). *Rezulytatay i tendentsii v bolgarskoy prokurature v protsesse ee protivodeystviya prestupnosti*. // Mezhdunarodnaya nauchnaya zhurnal „Internauka“, Kiev, Ukraina, № 15 (95) 1 t., s. 62-67, ISSN 2520-2057 (Терзиев, В., Георгиев, М., Банков, С. *Результаты и тенденции в болгарской прокуратуре в процессе ее противодействия преступности*. // Международный научный журнал „Интернаука“, Киев, Украина, № 15 (95) 1 т., с. 62-67, ISSN 2520-2057).
3. Terziev, V., Georgiev, M., Bankov, S. (2020b). *Bolgarskaya prokuratura kak vedushchaya institutsiya v Bolgarii*. // Mezhdunarodnaya nauchnaya zhurnal «Internauka», Kiev, Ukraina, № 15 (95) 1 t., s. 68-75, ISSN 2520-2057 (Терзиев, В., Георгиев, М., Банков, С. *Болгарская прокуратура как ведущая институция в Болгарии*. // Международный научный журнал «Интернаука», Киев, Украина, № 15 (95) 1 т., с. 68-75, ISSN 2520-2057).
4. Terziev, V., Georgiev, M., Bankov, S. (2020c). *Edinaya katalog korruptsionnykh prestupleniy v bolgarskoy prokurature*. // Mezhdunarodnaya nauchnaya zhurnal «Internauka», Kiev, Ukraina, № 14(94), 2020, 2 t., s. 43-45, ISSN 2520-2057 (Терзиев, В., Георгиев, М., Банков, С. *Единый каталог коррупционных преступлений в болгарской прокуратуре*. // Международный научный журнал «Интернаука», Киев, Украина, № 14(94), 2020, 2 т., с. 43-45, ISSN 2520-2057).
5. <https://www.parliament.bg/bg/const> (2020d).
6. Terziev, V., Georgiev, M., Bankov, S. (2020e). *Meray i iniatsitivay bolgarskoy prokuraturay po osushtestvleniyu horoshih praktik*. // Mezhdunarodnaya nauchnaya zhurnal «Internauka», Kiev, Ukraina, 2020, № 12 (92), s. 69-72, ISSN 2520-2057 (Терзиев, В., Георгиев, М., Банков, С. *Меры и инициативы болгарской прокуратуры по осуществлению хороших практик*. // Международный научный журнал «Интернаука», Киев, Украина, 2020, № 12 (92), с. 69-72, ISSN 2520-2057).
7. Terziev, V., Georgiev, M., Bankov, S. (2020f). *Achieved results of the Bulgarian Prosecutor's Office in the prosecution and investigation of crimes of corruption*. // 58th International Scientific Conference on Economic and Social Development – Budapest, 04-05 September, 2020, Economic and Social Development (Book of Proceedings), pp. 384-387, 2020, ISSN 1849-7535.
8. Terziev, V., Georgiev, M., Bankov, S. (2020g). *The functions of the Bulgarian Prosecutor's Office to guarantee compliance with the law during investigations*. // 58th International Scientific Conference on Economic and Social Development – Budapest, 04-05 September, 2020, Economic and Social Development (Book of Proceedings), pp. 1-5, 2020, ISSN 1849-7535.
9. Terziev, V., Georgiev, M., Bankov, S. (2020h). *Interaction of the Prosecutor's office with the competent state authorities for counteraction of corruption*. // International scientific journal “Internauka”, Kiev, Ukraine, 2020, № 12 (92), pp. 54-57, ISSN 2520-2057.
10. Terziev, V., Georgiev, M., Bankov, S. (2020i). *Increasing the risk of corruption activities during a COVID-19 pandemic*. // International scientific journal “Internauka”, Kiev, Ukraine, 2020, № 12 (92), pp. 58-59, ISSN 2520-2057.

# STRATEGIC CHALLENGES OF TRANSNATIONAL CORPORATIONS FROM EMERGING ECONOMIES

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## ABSTRACT

*For the first time in 2020, there are more Chinese corporations on the Fortune Global 500 list than American corporations. The objective of this paper is to analyze transnational corporations from emerging economies. Their most common corporate advantages are related to entrepreneurial agility, flexibility / responsibility, and business experience in demanding business environments. A large number of these corporations have developed the brand and technology in an unconventional way and joint investments with transnational corporations originating from developed countries are an important driver for the acquisition of technological knowledge. The paper also emphasizes important category of transnational corporations from emerging economies - state-owned corporations. Specific challenges faced by transnational corporations from emerging economies are presented in detail.*

**Keywords:** *transnational corporations, transnationality index, emerging economies, strategic challenges, impact*

## 1. INTRODUCTION

Transnational corporations are the strongest and most significant single economic entity of today. Their role and strength is indisputable. In 2019, the 500 largest corporations in the world generated revenue of \$ 33.3 trillion, or a profit of \$ 2.1 trillion. In 2020, the 500 largest corporations in the world represented 32 countries and employed 69.9 million people. The economic strength and income of the largest corporations today significantly exceed the gross domestic product of most middle-developed and developing countries. Analyzing the largest transnational corporations in 2020 according to the Fortune Global 500, among the top ten largest transnational corporations are three corporations from China, three from Europe, two from the US, one from Japan and one from Saudi Arabia. Looking at the ten largest transnational corporations in 2020, it is interesting to notice changes compared to 2000. According to the Fortune Global 500 in 2000, the structure of the ten largest transnational corporations consisted of six corporations from the U.S. (ranking first five and ninth on the list) and four corporations from Japan. In 2020, only Walmart and Toyota remained among the ten largest transnational corporations on the 2000 list. For the first time in 2020, there are more Chinese corporations on the Fortune Global 500 list than American corporations. The Fortune Global 500 list for 1990 included a total of 151 U.S. corporations and three Chinese corporations, and in 2020, a total of 121 U.S. corporations and 124 Chinese corporations were recorded. When Taiwan is added to China, then the total number of transnational corporations is even higher (133 corporations). But they still lag behind in total revenue relative to U.S. corporations. The challenges that transnational corporations from emerging economies have faced in recent years will be described below.

## 2. TRANSNATIONALITY AND TRANSNATIONAL CORPORATIONS

In 1995, the United Nations Conference on Trade and Development (UNCTAD) introduced the Transnationality Index (TNI) with the idea of assessing the extent to which transnational corporations are involved in foreign activities in relation to activities in the country of origin (UNCTAD, 1995).

The index is designed to give a quick and comprehensive view of the position of different companies / industries / countries in the process of internationalization. It is calculated as the average value of the three ratios (foreign sales / total sales + foreign assets / total assets + foreign employees / total employees). The Transnationality Index is calculated annually for the 100 largest transnational non-financial corporations selected according to the criterion of the largest foreign assets. The calculation is done by Erasmus University of Rotterdam. The advantage of this index is that it includes three aspects of measuring the intensity of foreign activities in relation to total activities; the disadvantage, however, is that it does not make a distinction between those transnational corporations that concentrate most of their foreign activities in a small number of countries and those that operate in a large number of countries. Since the index does not cover the size of the national economy, the interpretation is somewhat ambiguous. A high value of the transnationality index may indicate strong international competitiveness, but it can also mean a questionable competitive advantage in the country of origin. It is also interesting to note that transnational corporations coming from small countries record a higher degree of internationalization than corporations from strong, large economies. This is logical because large economies have greater opportunities to absorb corporate activities, and transnational corporations can realize most of their potential nationally (Rahimić and Podrug, 2013). Tables 1 and 2 refer to the largest non-financial transnational corporations from developed countries and developing countries and transition countries, ranked according to the value of foreign assets.

*Table 1: The world's top non-financial transnational corporations, ranked by foreign assets, 2019<sup>a</sup>, millions of dollars and number of employees*

Ranking by:		Corporation	Home economy	Industry <sup>c</sup>	Assets		Sales		Employment		TNI <sup>b</sup> (Per cent)
Foreign assets	TNI <sup>b</sup>				Foreign	Total	Foreign	Total	Foreign <sup>d</sup>	Total	
1	19	Royal Dutch Shell plc	United Kingdom	Mining, quarrying and petroleum	376 417	402 681	276 518	331 684	59 000	83 000	82,6
2	46	Toyota Motor Corporation	Japan	Motor Vehicles	307 538	485 422	187 768	275 390	227 787	359 542	65,0
3	22	BP plc	United Kingdom	Petroleum Refining and Related	259 860	295 194	215 203	278 397	58 900	72 500	82,2
4	41	Softbank Group Corp	Japan	Telecommunications	253 163	343 306	29 286	56 910	55 272	74 953	66,3
5	27	Total SA	France	Petroleum Refining and Related	249 678	273 865	137 438	175 985	71 456	107 776	78,5
6	54	Volkswagen Group	Germany	Motor Vehicles	243 469	548 271	227 940	282 776	374 000	671 000	60,3
7	17	Anheuser-Busch InBev NV	Belgium	Food & beverages	192 138	237 142	44 352	52 251	148 111	171 915	84,0
8	29	British American Tobacco PLC	United Kingdom	Tobacco	184 959	186 194	25 232	32 998	31 196	53 185	78,2
9	56	Daimler AG	Germany	Motor Vehicles	179 506	339 742	163 875	193 357	124 842	298 655	59,8
10	60	Chevron Corporation	United States	Petroleum Refining and Related	172 830	237 428	75 591	140 156	22 800	48 200	58,0
11	78	Exxon Mobil Corporation	United States	Petroleum Refining and Related	169 719	362 597	123 801	255 583	35 058	74 900	47,4
12	13	Vodafone Group Plc	United Kingdom	Telecommunications	168 394	184 253	42 530	49 971	58 429	68 724	87,2
13	88	EDF SA	France	Electricity, gas and water	155 021	340 692	30 625	79 827	34 381	165 790	34,9
14	11	CK Hutchison Holdings Limited	Hong Kong,	Retail Trade	143 367	155 523	32 556	38 163	279 000	300 000	90,2
15	33	Honda Motor Co Ltd	Japan	Motor Vehicles	143 180	188 541	116 150	137 382	153 215	219 722	76,7
16	71	Enel SpA	Italy	Electricity, gas and water	135 691	192 570	28 311	86 597	38 503	68 253	53,2
17	32	Siemens AG	Germany	Industrial and Commercial	134 634	163 598	77 280	97 957	269 000	385 000	77,0
18	96	China National Petroleum Corp (CNPC)	China	Mining, quarrying and petroleum	133 636	595 935	171 756	410 023	122 704	1 266 400 <sup>e</sup>	24,7
19	49	Deutsche Telekom AG	Germany	Telecommunications	132 443	191 723	62 605	90 140	116 422	210 533	64,6
20	63	BMW AG	Germany	Motor Vehicles	126 609	256 160	101 614	116 644	43 360	133 778	56,3

a) Preliminary results based on data from the companies' financial reporting; corresponds to the financial year from 1 April 2019 to 31 March 2020.

b) TNI, the Transnationality Index, is calculated as the average of the following three ratios: foreign assets to total assets, foreign sales to total sales and foreign employment to total employment.

c) Industry classification for companies follows the United States Standard Industrial Classification as used by the United States Securities and Exchange Commission (SEC).

d) In a number of cases foreign employment data were calculated by applying the share of foreign employment in total employment of the previous year to total employment of 2019.

e) Data refers to 2018.

(Source: <https://unctad.org/topic/investment/world-investment-report?tab=Annex%19Table>)

*Table 2: The world's top non-financial transnational corporation from developing and transition economies, ranked by foreign assets, 2018<sup>a</sup>, millions of dollars and number of employees*

Ranking by:					Assets		Sales		Employment		TNI (Per cent)
Foreign assets	TNI <sup>b</sup>	Corporation	Home economy	Industry <sup>c</sup>	Foreign	Total	Foreign	Total	Foreign <sup>d</sup>	Total	
1	4	CK Hutchison Holdings Limited	Hong Kong, China	Retail Trade	144 891	157 337	33 036	35 358	279 000	300 000	92,8
2	80	China National Petroleum Corp (CNPC)	China	Mining, quarrying and petroleum	133 636	595 935	171 756	410 023	122 704	1 266 400	24,7
3	5	Hon Hai Precision Industries	Taiwan Province of China	Electronic components	106 644	110 609	171 647	175 576	824 063	987 613	92,5
4	84	Sinopec - China Petrochemical Corporation	China	Petroleum Refining and Related Industries	90 492	328 607	132 500	443 308	39 658	423 543	22,3
5	42	Samsung Electronics Co., Ltd.	Korea, Republic of	Communications equipment	84 717	304 057	136 064	221 464	215 542	308 746	53,0
6	90	China COSCO Shipping Corp Ltd	China	Transport and storage	81 190	315 020	22 786	114 465	8 091	173 300	16,8
7	56	Tencent Holdings Limited	China	Computer and Data Processing	77 594	119 824	1 555	53 813	35 169	54 309	44,1
8	69	China National Offshore Oil Corp (CNOOC)	China	Mining, quarrying and petroleum	69 517	176 882	65 071	108 065	4 671	94 000	34,8
9	37	Sinochem Group	China	Chemicals and Allied Products	57 275	71 200	75 201	89 308	11 023	65 271	60,5
10	32	China National Chemical Corporation (ChemC	China	Chemicals and Allied Products	54 090	117 011	32 768	34 433	86 025	167 000	64,3
11	59	Huawei Technologies Co, Ltd	China	Communications equipment	53 242	96 803	52 735	108 964	45 000	188 000	42,4
12	64	Petronas - Petroliaam Nasional Bhd	Malaysia	Mining, quarrying and petroleum	45 031	153 978	43 580	62 177	9 600	48 001	39,8
13	16	Trafigura Group Pte Ltd	Singapore	Wholesale Metals and Minerals	43 056	53 801	139 256	180 744	3 454	4 316	79,0
14	94	Saudi Aramco	Saudi Arabia	Mining, quarrying and petroleum	42 109	358 978	61 005	355 941	7 970	67 947	13,5
15	99	State Grid Corporation of China	China	Electricity, gas and water	41 636	571 770	15 537	387 191	15 759	917 717	4,3
16	75	Formosa Plastics Group	Taiwan Province of China	Chemicals and Allied Products	40 685	134 779	21 156	79 780	38 246	115 376	30,0
17	47	Legend Holdings Corporation	China	Computer Equipment	39 621	81 169	38 529	54 427	16 929	75 000	47,4
18	30	América Móvil SAB de CV	Mexico	Telecommunications	35 849	71 976	48 351	53 055	100 835	189 448	64,7
19	24	Tata Motors Ltd	India	Motor Vehicles	35 238	44 408	33 425	43 157	39 795	82 797	68,3
20	77	China Communications Construction Company	China	Construction	34 568	139 649	23 480	74 164	31 788	135 813	26,6

- a) Preliminary results based on data from the companies' financial reporting; corresponds to the financial year from 1 April 2018 to 31 March 2019.
- b) TNI, the Transnationality Index, is calculated as the average of the following three ratios: foreign assets to total assets, foreign sales to total sales and foreign employment to total employment.
- c) Industry classification for companies follows the United States Standard Industrial Classification as used by the United States Securities and Exchange Commission (SEC).
- d) In a number of cases foreign employment data were calculated by applying the share of foreign employment in total employment of the previous year to total employment of 2019.
- (Source: <https://unctad.org/topic/investment/world-investment-report?tab=Annex%20Table>)

As can be seen from Tables 1 and 2, data on transnational corporations from developed countries are separated from those originating from developing countries and transition countries. UNCTAD has retained the terminology (transnational corporations from developing and transition countries) although in modern literature they are even referred to as world-class transnational corporations (Van Agtmael, 2007). The new terms coined for these corporations are: BRIC transnational corporations, VISTA transnational corporations, etc. BRIC is an abbreviation and economic term referring to the growing economies of Brazil, Russia, India and China, and VISTA is an English abbreviation and economic term referring to the growing economies of Vietnam, Indonesia, South Africa, Turkey and Argentina. Table 3 shows other examples of clusters of growing economies.

*Table following on the next page*

*Table 3: Clusters of growing economies*

<b>NEXT 11</b>	Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, Philippines, South Africa, South Korea, Turkey
<b>CIVETS</b>	Colombia, Indonesia, Vietnam, Egypt, Turkey, South Africa
<b>BEM - Big Emerging Markets</b>	Brazil, China, Egypt, India, Indonesia, Mexico, Philippines, Poland, Russia, South Africa, South Korea, Turkey
<b>MINT</b>	Mexico, Indonesia, Nigeria, Turkey
<b>BRICET</b>	Brazil, Russia, India, China, Eastern Europe, Turkey
<b>BRICK</b>	Brazil, Russia, India, China, South Korea
<b>BRICM</b>	Brazil, Russia, India, China, Mexico
<b>BRICS</b>	Brazil, Russia, India, China, South Africa

(Source: Van Tulder, R., Carneiro, J. and Gonzalez-Perez, M. A. (2017) *Introduction: What makes BRIC multinationals special?*. In: Van Tulder, R., Verbeke, A., Carneiro, J. and Gonzalez-Perez, M. A., eds. *The Challenge of BRIC Multinationals. Progress in International Business Research. Vol. 11*, Bingley: Emerald Group Publishing Limited, pp. 45.)

### 3. CHALLENGES OF TRANSNATIONAL CORPORATIONS FROM EMERGING MARKETS

Analyzing transnational corporations from emerging economies, Verbeke and Kano (2015) identified how their most common corporate advantages are related to entrepreneurial agility, flexibility / responsibility, and business experience in demanding business environments. They also noted that a large number of corporations have developed the brand and technology in an unconventional way and that joint investments with transnational corporations originating from developed countries are an important driver for the acquisition of technological knowledge. Wells (1983) very cautiously predicted the long-term progress of transnational corporations from emerging economies. He warned that their competitive advantages in the international market may not be beneficial to the long-term success of the corporation. Collinson and Rugman (2007) emphasize that the majority of their sales are concentrated in the region of origin and that a small number of transnational corporations from emerging economies have a global reach achieving relatively uniform sales among different regions of the world. Numerous studies point to the problematic long-term business results of cross-border activities of transnational corporations from emerging economies (Peng, Sun, & Blevins, 2011; Quer-Ramón, Claver-Cortés, & Rienda-Garcia, 2014). The reason for this is the lack of recombination competencies that are necessary for the effective integration of the acquired companies as well as for the management of the transfer and the development of specific corporate advantages after the takeover. In particular, state-owned corporations from emerging economies face difficulties in developing specific corporate advantages, but nevertheless carry out internalizing activities for political and other external reasons. Kano, Verbeke, and Van Tulder (2017) point out that state-owned corporations from emerging economies fail to effectively combine specific corporate advantages with specific advantages of the host country. Wells (1983) predicted that the technology and products of transnational corporations from emerging economies are the result of specific conditions in the country of origin and that such technology and products will best suit other emerging economies. But that didn't turn out to be true. The best examples of significant high-tech investments around the world are Brazil's Embraer, Argentina's Tenaris, Mexico's Cemex, South Korea's Samsung and China's Lenovo. Although in the beginning these corporations developed technology in collaboration with transnational corporations from developed countries, it can now be said that R&D practices in transnational corporations from emerging economies are among the world's leading innovators (Kano, Verbeke, & van Tulder, 2017).

Wells' prediction, however, proved to be accurate for Russian transnational corporations (Kuznetsov, 2010). Russian investments are predominantly linked to the former Soviet bloc, part of the Balkan countries and the Commonwealth of Independent States (CIS) because these are countries that have similar languages, historical heritage (and consequently similar economic and legal systems), similar transition problems as well as political connections that reduce distance-related transaction costs (Kuznetsov, 2010). As an important category of transnational corporations from emerging economies, it is important to single out state-owned corporations. Although they can differ significantly in the degree of state ownership, the way the state is involved, etc., the most important are the differences in strategy, goals and other characteristics. However, for success in the international market, recombination competencies are crucial, not ownership structures. Namely, all corporations, both private and state-owned, face the same challenges in the international market, but state-owned corporations most often have specific corporate advantages related to state ownership, so they are very likely locationally limited or non-transferable. Therefore, a major challenge faced by state-owned corporations from emerging economies is the effective transfer and recombination of specific corporate advantages with the specific advantages of the host country. Successful examples of transfer and recombination of corporate advantages with specific advantages of the host country are the Chinese Lenovo and Haier where the state also participates in ownership. In contrast, an unsuccessful example is China's Changhong Electric, a Chinese state-owned corporation that failed to enter the U.S. consumer electronics market due to an inability to connect with local distributors (Kano, Verbeke, & Van Tulder, 2017). Why are transnational corporations from emerging economies interesting? Yiu, Lau, and Bruton (2007) identified how their internationalization strategies are oriented toward acquiring strategic assets, and are aggressive, high-risk, and radical because they target many consumers in different countries at the same time. Dunning, Kim, and Park (2008) compared transnational corporations from developed countries in the 1960s with transnational corporations from emerging economies in the early 21st century. They noticed the following differences: the form of entering the foreign market (transnational corporations from growing economies are more oriented to strategic alliances), motivation (transnational corporations from growing economies are more oriented to increase assets due to insufficient ownership advantages), managerial approach (transnational corporations from emerging economies apply a more regional and geocentric approach), the role of the government of the country of origin (governments of emerging economies are taking a more active role than in the past). Furthermore, Cuervo-Cazurra and Ramamurti (2014) argue that the ownership advantages of transnational corporations from emerging economies are distinctive to the advantages of transnational corporations from developed countries. Their ownership advantages are primarily related to organization and management, and less to brand and technological innovation. In addition to the history of state ownership, Cuervo-Cazurra and Ramamurti (2014) also identified how transnational corporations from emerging economies resort more to takeovers than to organic international expansion.

#### **4. IMPACT OF TRANSNATIONAL CORPORATIONS FROM EMERGING MARKETS**

Although transnational corporations develop for their own interests, their productive, financial, technological, and market capacity and strength have a significant impact in each country where they develop their activities. This is why transnational corporations, especially from emerging economies, are not only business, but also extremely important political and social institutions of the modern world. Transnational corporations as bearers of continuous change increase interdependencies among people, economies and countries, and greater interdependence also means a greater likelihood of conflict. Therefore, there are frequent discussions about the controversy of the phenomenon of transnational corporations because they can have a positive



and negative effect on the economies of individual countries (Rakita, 2013). It is unquestionable how transnational corporations increase the degree of technological dependence of less developed countries, but they also have a positive effect on those same countries. With the strength of their development and market potentials, transnational corporations provide additional resources for many countries, technology transfer, knowledge transfer for citizens, more dynamic industrialization, higher employment, international market standards, better basis for development, greater economic diversification, competitive training to enter foreign markets. etc. (Rugman and Doh, 2008). At the same time, transnational corporations are treated as a significant threat to the sovereignty and economic independence of individual countries. Therefore, conflicts often occur between transnational corporations and individual countries due to different expectations and the relative market power of the corporation in the new environment, the industry in which the corporation operates, management style, etc. Often countries and their representatives initiate potential conflicts, so it is common for transnational corporations to encounter a number of limitations (Rakita, 2013). Experience shows that countries that do not behave too restrictively towards transnational corporations, get positive results for their own economy. In the context of the external effects of the operations of transnational corporations, it is important to point out the dark side of their operations. Although dominant theoretical considerations define transnational corporations as agents of economic exchange and as benign or neutral in terms of ethics, a number of transnational corporations are still involved in activities that can be labeled as unethical or even illegal (Crains and As-Sareb, 2017). The dominant contemporary view of benign or neutral transnational corporations in most cases ignores the fact that there are businesses whose activities are very problematic. An example of this is transnational corporations from the fast food industry that create the problem of obesity and other health problems in less developed countries (Patterson, 2011). One of the biggest tragedies related to the textile industry is the demolition of the Rana Plaza building in Bangladesh when 1,113 workers were killed and over 2,000 workers were injured in 2013. This tragedy pointed to a number of omissions and problems and resulted in the Accord on Fire and Building Safety Agreement signed in May 2013. It was the first modern, five-year, binding agreement between workers, factory management and transnational corporations under which transnational corporations (global brands and retail chains) are responsible for ensuring safe working conditions for factory workers. The 2018 Fire and Building Safety Agreement was signed by more than 200 global brands and retail chains, extending the original agreement to three years. Among the global brands that signed the Agreement in 2018 are Inditex, H&M and UNIQLO, which have more than 1,600 factories and together employ over 2 million workers. Unfortunately, every day workers die in shipyards in Bangladesh and India, in mines in China, etc. Experience confirms that only tragic events with loss of human lives can change business practices.

## 5. CONCLUSION

In conclusion, it is important to point out that transnational corporations from developing economies are specific, but just as important as those from more developed economies. In the context of external effects (positive and negative) of transnational corporations' operations, it is important to conclude that the activities of transnational corporations should be analyzed contextually, taking into account different stakeholders, to determine the legislative and ethical dimensions of these activities. It is also important to point out the relativization of the national origins of transnational corporations. Namely, today it has become very difficult and even impossible to identify the national origin of many products. The products are assembled from components from different parts of the world. It is through this process of emphatically decomposing national intent and hybrid product origins that new opportunities for business cooperation and networking of leading transnational corporations and accompanying

international competitors need to be identified. Future research should certainly analyze Verbeke's model of international corporate strategy for transnational corporations from developing economies to specify the specifics of their global success.

## LITERATURE:

1. Collinson, S. and Rugman, A. M. (2007) The regional characteristics of Asian multinational enterprises, *Asia Pacific Journal of Management*, Vol. 24, No. 4, pp. 429-446.
2. Cuervo-Cazurra, A. and Ramamurti, R. (2014) Introduction. In: Cuervo-Cazurra, A. i Ramamurti, R., eds. *Understanding multinational from emerging markets*. Cambridge: Cambridge University Press.
3. Dunning, J. H., Kim, C. and Park, D. (2008) Old wine in new bottles: A comparison of emerging market TNCs today and developed-contry TNCs thirty years ago. In: Sauvart, K., ed. *The rise of transnational corporations from emerging markets: Threat or opportunity?*. Northampton, MA: Edward Elgar.
4. Fortune magazine (2020) *Fortune Global 500*. Avaliable at: <https://fortune.com/global500/list/>
5. [https://bangladesh.wpengine.com/wp-content/uploads/2020/10/Accord\\_Quarterly\\_Aggregate\\_Report\\_July2020.pdf](https://bangladesh.wpengine.com/wp-content/uploads/2020/10/Accord_Quarterly_Aggregate_Report_July2020.pdf)
6. <https://www.workersrights.org/our-work/bangladesh-accord/>
7. Kano, L., Verbeke, A. and Van Tulder, R. (2017) Third world multinationals – then and now. In: Van Tulder, R., Verbeke, A., Carneiro, J. and Gonzalez-Perez, M. A., eds. *The Challenge of BRIC Multinationals*. Progress in International Business Research. Vol. 11, Bingley: Emerald Group Publishing Limited, pp. 17-40.
8. Kuznetsov, A. (2010) Urgent tasks for research on Russian TNCs. *Munich Personal RePec Archive Paper* No. 42702.
9. Patterson, S. (2011) Obesity in China: waistlines are expanding twice as fast as GDP, *US-China Today*.
10. Peng, M. W., Sun, S. L. and Blevins, D. P. (2011) The social responsibility of international business scholars, *Multinational Business Review*, Vol. 19, No. 2, pp. 106-119.
11. Quer-Ramón, D., Claver-Cortés, E. and Rienda-Garcia, L. (2014) Chinese MNCs: An overview of the current state of research. In: Verbeke, A., Van Tulder, R. and Lundan, S., eds. *Multinational enterprises, markets and institutional diversity*. Progress in International Business Research. Vol. 9, Bingley: Emerald Group Publishing Limited, pp. 477-503.
12. Rahimić, Z. and Podrug, N. (2013) *Međunarodni menadžment*. Sarajevo: Ekonomski fakultet.
13. Rakita, B. (2013) *Međunarodni biznis i menadžment*. Beograd: Ekonomski fakultet.
14. Rugman, A. M. and Doh, J. P. (2008) *Multinational and Development*. New Haven & London: Yale University Press.
15. UNCTAD (1995) *World Investment Report 1995. Trends and Determinants*. New York: UN.
16. UNCTAD (2002) *World Investment Report 2001: Promoting Linkages*. New York i Geneva: United Nations.
17. UNCTAD (2019) *World Investment Report 2019: Special Economic Zones*. New York: UN. Available at: <https://unctad.org/webflyer/world-investment-report-2019>
18. UNCTAD (2020) *World Investment Report 2020: International Production Beyond The Pandemic*. New York: UN. Available at: [https://unctad.org/system/files/official-document/wir2020\\_en.pdf](https://unctad.org/system/files/official-document/wir2020_en.pdf)
19. Van Agtmael, A. (2007) *The emerging market century: How a breed of world-class companies is overtaking the world*. New Yor, NY: Free Press.

20. Van Tulder, R., Carneiro, J. and Gonzalez-Perez, M. A. (2017) Introduction: What makes BRIC multinationals special?. In: Van Tulder, R., Verbeke, A., Carneiro, J. i Gonzalez-Perez, M. A., eds. *The Challenge of BRIC Multinationals*. Progress in International Business Research. Vol. 11, Bingley: Emerald Group Publishing Limited, pp. 41-57.
21. Verbeke, A. and Kano, L. (2015) The new internalization theory and multinational enterprises from emerging economies: A business history perspective, *Business History Review*, Vol. 89, No. 3, pp. 415-445.
22. Wells, L. T. (1983) *Third world multinationals: The rise of foreign investment from developing countries*. Cambridge, MA: MIT Press.
23. Yiu, D. C., Lau and Bruton, G. (2007) International venturing by emerging economy firms: The effects of firm capabilities, home country networks, and corporate entrepreneurship, *Journal of International Business Studies*, Vol. 38, No. 4, pp. 519-540.

## ACCOUNTANTS IN THE DIGITAL AGE, FROM PRIVATE TO PUBLIC SECTOR: A LITERATURE REVIEW

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### ABSTRACT

*Organizations are being reinvented due digitalization and the age of disruption is announced by accounting scholars. This article aims to describe how the topic of Digitalization of Accounting has been integrated in research agenda, both in private and public sector. By applying the systematic literature review methodology, we provide an overview of the research on the topic, identify the methodologies and main contributions of the studies published in the web of science, between 2015 and 2020. This study concludes that the digital skills of professionals are the crucial factor in the development and implementation of emerging technologies in organizations. It also concluded that the optimistic perspective is dominant, i.e., digital transformation is an opportunity for accounting and accounts more than it is a threat. The paper contributes to the definition of new research questions.*

**Keywords:** *Accounting, Emerging Information Technologies, Digitalization, Systematic Literature Review*

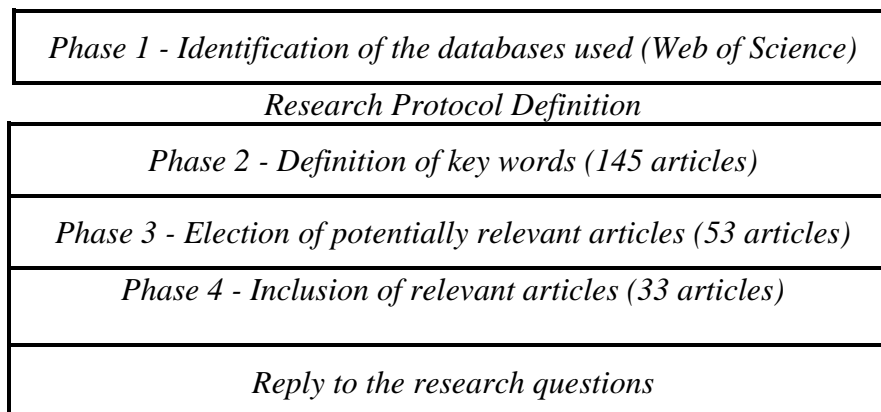
### 1. INTRODUCTION

The evolution of technology has driven the transformation of many industries, as well as public organizations. As a result, accounting profession has been challenged to adapt this new era. The fourth industrial revolution can be characterized as the fusion between physical processes and digitalization in decentralized systems. This means a huge change of the social and organizational environment in which accounting operates, as well as in the tasks, functions, duties, and skills demanded to accountants. The age of disruption is announced by accounting scholars. According to Michael Bromwicha (2016), despite greater amount of data suggests that the decision-making process are more rational, at the same time there is an increase in the level of complexity. It is here accountants distinguish themselves from other professions since they have different skills than those of computer analysts and the ability to identify relevant information. This involvement of accountants with data analyses is highly valued Quattrone (2016); Greg Richins et al. (2017); Moll and Yigitbasioglu (2019) illustrate the new reality mentioning that, access to distributed ledgers (blockchain) and big data supported by cloud-based analytics tools and AI will automate decision making to a large extent. However, Tuomas Korhonen (2020) asks our attention for the risk of automation regarding information quality.

The authors emphasize that “practitioners need to carefully analyze the entity they wish to automate and understand the factual possibilities of using and maintaining the planned automatic system throughout its life cycle. This paper reviews the accounting literature that focuses on Digitalization of Accounting. The key questions are: How do researchers interpret this process? What are the big ideas that researcher bring to us? To answer these questions, a systematic review of the literature was carried out, based on the indexed articles on the Web of Science platform, over the last five years. In the next session, the methodology adopted, and the procedures carried out during the data collection, selection and analysis process will be addressed. Following, the results of the analysis will be presented and discussed in session 3. Finally, we expose the final considerations and proposals for future work.

## 2. METHODOLOGY

The systematic review of literature requires the application of very clear and explicit methodological procedures. Currently, researchers have practical guidelines for the development of these studies, such as the Cochrane Handbook, and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses. The application of these procedures in the social sciences requires some adaptations. In this review, the PRISMA (2019) methodology was adopted. The next figure illustrated the main step we followed:



*Figure 1: Data collection procedures  
(Source: Self elaboration)*

The databases used for the research of articles were the Web of Science platform. Since the aim was to analyse the latest research trends in this area, it has been restricted to the last five years and carried out with the keywords: "accounting" and ("digitalization" or "digital" or "ICT"). The survey was carried out on June 20, 2020 and 145 articles were obtained. To establish literature review reliability, we define the following inclusion criterion: to have accounting or accounting subject as research field; and simultaneously; to address digital transformation of accounting as the issue. To assess this last criterion, the paper must tackle at least one emerging technology in the accounting area (blockchain; big data; artificial intelligence; cloud computing). In turn, it would have to fit into the accounting perspective by listing digital competence profiles, including reporting of accounting information. On the other hand, articles that focused more on the economic and financial area rather than on the accounting were excluded. Again, the articles which focused on technology, but without discussing it on accounting field were also excluded. The inclusion criteria were applied by two researchers. The first filter was based on title and abstract and it reduced the total number of articles to 53. This screening process raised doubts about 2 articles. The two researchers ended up agreeing to include these articles. Subsequently, the selection process for the relevant articles was carried out by the researchers in an independent manner by reading the entire paper.

There were three cases that triggered discussion. These cases were decided by a third researcher. After the selection process was completed, 33 articles remained for further analysis of the contents included in Table 1.

<b>Authors/ year</b>	<b>Objectives/Research Question</b>	<b>Methodology</b>	<b>Conclusions/Contributions</b>
Diller et al. (2020)	This study focuses on relationship between tax consultants' Big-Five personality and their level of digitization.	Quantitative – Survey.	With a high score in terms of extraversion and openness to experience and low in neuroticism, they exhibit a higher level of digitalization.
V. Pashaeva et al. (2020)	The importance and significance of digitalization determined the research objective	Qualitative and quantitative - mix research	The presented model made it possible to state that: the number of analytical processes increases with the systematisation of accounting positions; focus should be given to adaptive databases aimed at scalability and simplification of data; and the use of automatic tools allow vertical and horizontal analysis of DBs.
Schiavi et al. (2020)	Examines the innovation capability of accounting firms in the Brazilian market, in their use of digital technologies.	Qualitative and descriptive research	Accounting has started on the traditional path to digital innovation, Technology-related solutions can generate changes in the business and especially in processes.
Lois et al. (2020)	Examining continuous auditing in the digital age from the auditors' perspective	Quantitative research	Acceptance towards technology and modern techniques, provided companies ensure adequate preparation and staff training conditions.
Gardner and Bryson (2020)	Identify the impacts of changing accounting standards using new technologies.	Qualitative research	Technological and regulatory innovations have the potential to enable product and process innovations in all industries. The ongoing application of artificial intelligence and machine learning will require new regulatory supervision.
Severini et al. (2020)	Show the potential of the disaggregated multisector analysis with the macro multipliers approach as a tool of economic policy.	Qualitative – Case study;	The SAM constructed for this exercise allows for a proper disaggregation of the labour factor by formal educational attainment, digital competences and gender for the case of Italy.
Bhimani (2020)	Explore the applicability of conventional methodological thinking applied to digital data environments on management accounting studies.	Qualitative – Literature review.	It presents research issues and methodologies in the area of Technologies applied to management accounting.
Narcisa Roxana Mosteanu (2020)	Present how artificial intelligence combine financial information with tech capabilities.	Qualitative – Exploratory research.	The main benefits of the technologies include: reducing the risk of error; low risk of fraud; system automation, big data analysis, huge cost savings, increased reliability in financial reports, and reduced workflow.
Melnychenko et al. (2020)	Definition of the dominant ideas of financial technologies in digital banking.	Qualitative and quantitative – mix research Case study.	Dominant financial technology tools in digital banking are cloud technologies, big data, blockchain and artificial intelligence.

Kokina and Blanchette (2019)	Explores emerging themes surrounding bot implementation for accounting and finance tasks (RPA).	Qualitative and quantitative-mix research Multiple case study	Broader implementation of RPA in accounting and finance tasks is still in the early stages.
Moll and Yigitbasioglu (2019)	Reviews the accounting literature that focuses on four Internet-related technologies that have the potential to dramatically change and disrupt the work of accountants and accounting researchers in the near future.	Qualitative – Systematic literature review.	The technologies create new opportunities: sharing of data, access to cutting-edge hardware/software. The accounting profession may need to be vigilant in developing the required skills, and policies to effectively govern the implementation and use of these technologies in organisations.
Pirrong (2019)	Examine several proposed DLT (Digital Ledger Technology) applications.	Qualitative – Publication article.	The initial enthusiasm for implementing blockchain has been dampened considerably by its collision with economic realities.
Oesterreich and Teuteberg (2019)	Examine the supply of business analytics competences in the current competence profiles of controlling professionals in an attempt to answer the question whether or not a skills gap exists.	Quantitative – Text analytics approach.	In comparing the controller's recent skills requirements with the current competence profiles of controlling professionals, we have observed a skills gap, namely the adoption level of IT and big data and the degree of job specialization.
Chiu et al. (2019)	Analyze methodologies used, accounting areas studied, and emerging technologies examined in scholarship in accounting information systems journals.	Qualitative – Systematic Literature.	These journals do not have a singular focus. The most frequently applied Other methodology is design science research (21.0%), followed by archival methods (18.7%). Auditing (41.6%), and financial (28.5%) are the most commonly researched accounting areas XBRL (26%) and Artificial intelligence are the most researched emergent technologies.
I. Troshani et al. (2018)	Trace the development, governance and adoption of IFRS Taxonomy to highlight the implications for accounting practice and standard setting.	Qualitative research	Whilst the taxonomy enables IFRS-based reporting in the digital age, tensions and detours result in the need for a realignment of the setting.
Fadilah S. et al. (2019)	Identify the influence of forensic accounting skills.	Quantitative and qualitative-mix research.	The results show that some forensic accounting skills, namely auditing; communication; psychological, criminological and victim logical; and ICT are influential in fraud detection, while other skills, that is investigative, legal, and accounting skills do not have an influence.
Zhang et al. (2019)	Creation of an effective digital system for intelligent financial environments.	Mix of qualitative and quantitative evidence – Case study.	The system guarantees that credible customers are selected, and avoids the potential risk of bad debts incurred by the loose credit limit, it strengthens the preventive control over aging receivables management and detects the potential risk of bad debts in the earlier system alert.
Yusasniza Mohd Yunus et al. (2019)	Examines the role of business leaders in the new era of disruptive technology and how it can fundamentally change	Qualitative research methodology and case	The findings revealed that support from the business leaders is necessary to motivate and encourage IT users to innovate with new technology. However,

	the organisations or individuals to adapt to work challenges in changing market dynamics across industries.	study approach .	resistant to change, feeling complacent and anxious towards new technology are some of the challenges that the business leaders have to deal with IT users.
Indrit Troshani (2018)	To use the conceptual lens of institutional work; to examine how traditional business-to-government reporting is abolished and how digital reporting is established to replace it in attempts to reduce administrative burden but without compromising regulation effectiveness.	Qualitative	The analyses confirm the effectiveness of regulatory mandate in stimulating disruption of traditional reporting to government and its replacement with digital reporting which is powered by XBRL, a radical technology that digitises reports, facilitating exchange of information between business and regulators and sharing among regulators.
Lalević Filipović et al. (2018)	Analyse the level of digitalized financial reporting process in local governments of three different Montenegrin geographic regions.	qualitative and quantitative – Mix research.	The degree of development of a particular region can also determine the perception of companies within it in terms of applying modern IT standards in the field of AIS.
Marshall and Lambert (2018)	Presenting a cognitive computing model, based on artificial intelligence (AI) technologies, supporting task automation in the accounting industry.	Qualitative – Research Article.	AI's capability to support less-structured decision making provides the accounting profession with the opportunity to transform a disruptive technological innovation into a competitive advantage.
Zhyvets (2019)	To identify key directions for improving the professional “digital” training of accountants.	Quantitative and qualitative-mix research	Research on the evolution of the professional competencies of accountants shows a lag in the content of their “digital” training from the real proficiency requirements for work at an automated workplace of the accountant of an enterprise.
Green et al. (2018)	Discusses the viewpoint that Big Data's major impacts on the accounting community will be changes in consumers' demand of accounting data and its impact on decision-making.	Qualitative – Text analytics.	With the Big Data, customers of accounting output will increasingly seek atomized, reconfigurable and transparent data. Decision-making consumers of accounting data will increasingly demand indirect raw data that they can combine into their own structures to perform their own analyses.
Lieda Amaral Souza (2017)	Analyse technological acceptance in the accounting environment.	Quantitative research.	It was observed from this fieldwork point to real evidence of the relationship between the constructs (perceived utility, behavioral intention and the current use of the system) to explain the intention and current use of a system by accountants.
Arntz et al. (2017)	Analyze the risk of job automation in the USA.	Quantitative research.	The tasks of bookkeeping, accounting and auditing clerks are assigned a 98% probability of being automated in the near future.
Coyne and McMickle (2017)	Analyze the question as to whether blockchain could become a safer alternative to today's accounting books. Evaluate the problems of the specific application of	Qualitative – Text analytics.	Is not feasible Blockchain as a safer alternative. Was identified several flaws that prevent the implementation of blockchain as a financial reporting tool: transactions exist outside accounting records and security benefits of the



	blockchain as accounting ledgers.		blockchain that make it seemingly immutable are not fully available or reliable in an accounting environment.
Martić et al. (2017)	Analyze the preparation of the accounting profession for the implementation of the XBR; evaluate the area in order to use modern methods related to accounting theory and practice, highlighting positive and negative aspects.	Quantitative research	Currently, the existence of multiple regulators with different levels of development and different standards when submitting financial statements seems to be one of the main challenges at the national level.
Mancini et al. (2017)	Contribute to the debate, in Italian research community, of accounting information systems, on the impact of digital technologies on accounting and management information systems that support control activities.	Quantitative research.	TIFRS XBRL taxonomy, without resolving the problems of translation and allowing a possible extension, could represent an element of rigidity for IFRS financial disclosure, created to provide the more and better information to stakeholders.
Fradeani et al. (2017)	Represents the first step of a multiyear project to improve the IFRS taxonomy by identifying the labels that need to be adjusted to match the local Italian accounting requirements.	Quantitative – Case study	The IFRS taxonomy has not shown the degrees of quality and completeness needed to make its application compulsory, if the compulsory adoption of XBRL is to become operational for IFRS fillers, preparers should be free to extend the taxonomy.
Quattrone (2016)	Reflect on the future of management accounting. Implications for management accounting.	Qualitative – Text analytics.	While the effects of the digital revolution on management accounting are still unclear, these effects surely will not deliver the dream of perfect information and rational decision-making as one may be lead to believe by the growth of data-driven organizations and societies.
Chirica (2018)	Try to linked strength and directness or indirectness impact of changes in management accounting processes on efficiency and innovation organizations.	Empirical study based on quantitative research.	The result is a continuous innovation of employees in improving processes and reducing costs, thereby preserving and enhancing the competitive advantage of the organization.
Barbosa Granados and Amariles Jaramillo (2019)	Determine the learning styles and the use of ITC in university students within a competency-based training model and to identify possible differences in terms of gender.	A descriptive and quantitative approach.	The outcome showed no significant differences among LS or in the frequency of ICT use in students with competency-based training. Additionally, the outcome showed a gender gap in which male students had the highest scores for the use of ICT.
Fadilah S. et al. (2019)	to identify the influence of forensic accounting skills, consisting of the auditing; investigative knowledge; legal knowledge; communication; psychological, criminological and victim logical; accounting and ICT skills of external auditors, on their ability to detect fraud.	Quantitative approach.	The results show that some forensic accounting skills, namely auditing skills; communication skills; psychological, criminological and victim logical skills; and ICT-related skills are influential in fraud detection, while other skills, that is investigative skills, legal skills, and accounting skills do not have an influence.

*Table 1: Summary of the content analysis process  
(Source: Self elaboration)*

### 3. ANALYSIS AND DISCUSSION OF RESULTS

Computerization is growing and accounting tasks are increasingly being developed through ICT linked to emerging technologies. Accounting as a profession seems to be moving slowly to this landscape and opinions are opposed for many reasons. ICT adds more speed and a lower incidence of error, but they lack something like critical thinking. This dual reality therefore requires critical thinking about the influence of industry 4.0 on the accounting sector. Four particularly relevant technologies have been identified: Big Data, Blockchain, RPA and XBRL. This review seeks not only to demonstrate that technologies are an important ally of a professional, considerably improving the scope of action and decision-making, but also to create several competitive advantages in business-day life. As shown in the above table, there is growing interest on the topic. The majority of the studies follows an exploratory approach. Many scholars focus on the impact of digitalization on the professional skills demanded to accountants and how universities and professional bodies are dealing with it. For instance, Severini et al. (2020), by using the Social Accounting Matrix Sekkal et al. (2019), carried out a multi-sectoral analysis to achieve a breakdown of labour by level, education, digital skills and gender in Italy. The authors' conclusions suggest that countries with abundance of highly qualified labour and digital competences are more developed. As a result, they tend to grow faster than others, except for the importance of the digital competences of professionals. Oesterreich and Teuteberg (2019) consider that the emergence of Big Data has led to a change in the expected skills profile of the controllers and management accountants. Digital and business analytics skills are considered mandatory for these professionals. The authors have analysed the current skill profile of professionals in order to understand whether there is a gap between demand and supply, concluding that the current skill profile of professionals does not correspond to market needs. emphasize the importance of the digital competences of accounting professionals, suggesting that they are a factor which positively influences the voluntary adoption of digital reporting of accounting information. Moll and Yigitbasioglu (2019) warn that accountants should be alert and develop the digital skills needed to be able to implement the use of these technologies in organizations. In addition to the technical skills characteristic of the profession, it is increasingly important for accountants to be able to develop their digital skills to take advantage of these technologies and to extend their scope of action within organizations. According I. Troshani et al. (2018), new organizational reporting and communication structure are emerging with new information technologies. The authors point out that one of the key elements for digital accounting infrastructure is IFRS Taxonomy, a digital representation of international accounting standards required in digital media production. By studying the development, administration, and adoption of IFRS Taxonomy, the authors were able to conclude that while it allows accounting information to be reported in accordance with IFRSs in the digital age, the tensions generated during the process resulted in a need to realign the perspectives of both accounting professionals and creators of this standard. Today more than ever, accountants must be at the forefront of technology so that they can be the interlocutors of organizations in these digitization processes. The provision of digital accounts presents several challenges, such as the integrity and quality of the information reported. Narcisa Roxana Mosteanu (2020) encourage the production of financial statements using tools such as XBRL and Blockchain. According to the authors, the main benefits of using these tools are reducing errors, especially human error, reducing fraud risk, automating systems, Big Data analyses, reducing costs, reducing workflow and increasing the reliability of the information produced. One of the key technologies that helps accounting professionals in these tasks is Robotic Process Automation (RPA), this is an emerging technology that enables you to automate processes through a set of rules and the use of bots' software. Kokina and Blanchette (2019) studied the implementation of bots' software in the accounting area and concluded that organizations do not benefit from the automation of all their processes, only those that are

structured/repeated/executed based on a set of digital rules and inputs. In addition to reducing costs, authors identify other gains for organizations, such as improvements in process documentation, reduced error rates and improvements in measuring performance and quality of reporting. In addition to the production of accounting information, emerging technologies are also able to assist in the reporting of accounting information. The XBRL is the international standard for the digital reporting of financial, performance, risk, and compliance of organizations. Through the textual analysis of the three largest groups of XBRL of LinkedIn, Perdana (2019) were able to identify the most interesting aspects for accounting professionals regarding XBRL and Data and Information Quality (DIQ). The authors propose a framework containing eighteen relevant DIQ dimensions derived from both accounting and information systems. The study of Al-Htaybat et al. (2019) explores the intersection between accounting practices and the new digital age technologies as a form of intellectual asset, by analysing the real implications of accounting performed using technologies such as Big Data Analytics and Blockchain, explaining how they can create value and achieve sustainable development objectives. According to the authors, this is possible because of the global brain, which is a network that connects all the technologies. Second, technology enables and facilitates unprecedented data sharing, access to hardware/software and cutting-edge tools that can complement and improve accounting tasks. In their study, Moll and Yigitbasioglu (2019) say that the legitimacy of the accounting profession may be called into question, given the number of tasks that these technologies have relieved from their daily lives. On the contrary, Narcisa Roxana Mosteanu (2020) argue that one of the main advantages of using these tools is precisely the fact that they, since they eliminate the need to carry out repetitive, time-consuming, and redundant tasks, allow accounting professionals to devote more time to more profitable analyses and research. In our opinion, this increase in productivity and efficiency will allow the profession to be transformed, in the sense that accountants will have the opportunity to demonstrate their true value by taking on new functions within the organizations, in which they will be able to apply their wide range of competences to the resolution of complex problems. It is curious to note that literature on the topic is mainly exploratory and, not surprisingly, it is dominated by developed countries and business accounting oriented. However, the implications of digitalization of accounting in public sector is an emerging topic.

#### **4. CONCLUSIONS**

Initially, it is worth highlighting the fact that several research articles on this subject are published by the International Journal of Accounting Information Systems which analyses the application of the tools, despite limited information in concrete situations. This study focused on the main emerging technologies, Big Data, Blockchain, RPA and XBRL and their implications for the accounting profession. From this analysis it was concluded that digitization strongly disrupts business and professional life, thus the digital competences of professionals are the crucial factor in the development and implementation of these technologies in organizations. However, the current skills profile of professionals does not correspond to market needs and they should continue to make efforts to reduce this gap of skills. Although these new technologies are a major challenge for professionals and organizations, it is up to accountants to work on developing the two digital skills so that they can be the interlocutors of organizations in their digitization processes. There are several benefits associated with implementing these technologies, such as reducing errors, especially human error, reducing fraud risk, automating systems, Big Data analysis, reducing costs, reducing workflow, increasing the reliability of the information produced and creating value. Finally, it has been possible to conclude that although these technologies are jeopardizing the accounting profession, professionals should look at these technologies not as a threat but as a challenge, an opportunity to add value to organizations, taking on new roles within organizations.

To do so, they will have to continue to develop a skills profile that is appropriate to this new reality. It is curious to note that literature on the topic is mainly exploratory and, not surprisingly, it is dominated by developed countries and business accounting oriented. However, the implications of digitalization of accounting in public sector is an emerging topic. This literature review opened a huge range of research questions which are urgent, namely:

- What will be the profile of the accounting professional 10 years from now?
- How are universities preparing the future accounts?
- What are the main changes in day-to-day accountant professional?
- Is there an emerging market of on-line accounting services?
- Is digitalization led to outsourcing of accounting services in distant countries?
- The impact of digitalization will be the same in all the subjects of accounting: financial accounting; management accounting; public accounting?
- How accountants interact with managers and decision makers in the context of decentralized organizations?

These are some of the questions still unanswered. But digitalization also has great effects on how accounting research carrying out investigations. As point out by Bhimani (2020), digital data environments impact methodological precepts and digital data characteristics alter what can be drawn from empirical studies.

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## LITERATURE:

1. Al-htaybat, K., Hutaibat, K. & Von Alberti-Alhtaybat, L. 2019. Global brain-reflective accounting practices. *Journal of Intellectual Capital*, 20, 733-762.
2. Arntz, M., Gregory, T. & Zierahn, U. 2017. Revisiting the risk of automation. *Economics Letters*, 159, 157-160.
3. Barbosa Granados, S. H. & Amariles Jaramillo, M. L. 2019. Learning Styles and the Use of ICT in University Students within a Competency-Based Training Model. *Journal of New Approaches in Educational Research*, 8, 1-6.
4. Bhimani, A. 2020. Digital data and management accounting: why we need to rethink research methods. *Journal of Management Control*, 31, 9-23.
5. Chirica, A. 2018. Knowledge management of modern public accounting practice. *Strategica - International Academic Conference* 1357-1364.
6. Chiu, V., Liu, Q., Muehlmann, B. & Baldwin, A. 2019. A bibliometric analysis of accounting information systems journals and their emerging technologies contributions. *International Journal of Accounting Information Systems*, 32, 24-43.
7. Coyne, J. & McMickle, P. 2017. Can Blockchains Serve an Accounting Purpose? *Journal of Emerging Technologies in Accounting*, 14, 101-111.
8. Diller, M., Asen, M. & Späth, T. 2020. The effects of personality traits on digital transformation: Evidence from German tax consulting. *International Journal of Accounting Information Systems*, 37.
9. Fadilah S., Maemunah M., Nurrahmawati, Lim T.N. & Sundary R.I. 2019. Forensic accounting: Fraud detection skills for external auditor. *Polish Journal of Management Studies*, 20, 168-180.
10. Fradeani, A., Regoliosi, C., D'Eri, A. & Campanari, F. 2017. Implementation of Mandatory IFRS Financial Disclosures in a Voluntary Format: Evidence from the Italian XBRL Project. *Reshaping Accounting and Management Control Systems*.

11. Gardner, E. & Bryson, J. R. 2020. The dark side of the industrialisation of accountancy: innovation, commoditization, colonization and competitiveness. *Industry and Innovation*, 28, 42-57.
12. Green, S., Mckinney Jr, E., Heppard, K. & Garcia, L. 2018. Big Data, digital demand and decision-making. *International Journal of Accounting & Information Management*, 26, 541-555.
13. Richins G., Stapleton A & Theophanis C. Stratopoulos & Wong, C. 2017. Big Data Analytics: Opportunity or Threat for the Accounting Profession? *Journal of Information Systems*, 31, 63–79.
14. I. Troshani, J. Locke & Rowbottom, N. 2018. Transformation of accounting through digital standardisation. *Accounting, Auditing & Accountability Journal*, 32, 133-162.
15. Troshani, I., Janssen, M., Lymer, A., & Parker, L. D. 2018. Digital transformation of business-to-government reporting: An institutional work perspective. *International Journal of Accounting Information Systems*, 31, 17-36.
16. Kokina, J. & Blanchette, S. 2019. Early evidence of digital labor in accounting: Innovation with Robotic Process Automation. *International Journal of Accounting Information Systems*, 35.
17. Filipović, A., Martić, V. & Demirović, S. 2018. Digitalization of financial reporting in local governments of three Montenegrin regions – Current situation and perspectives. *Management Journal of Contemporary Management Issues*, 23, 59-79.
18. Souza A., Silva M., & Ferreira T. 2017. A aceitação da tecnologia da informação pela área contábil. *Sistemas & Gestão*, 12, 516-524.
19. Lois, P., Drogalas, G., Karagiorgos, A. & Tsikalakis, K. 2020. Internal audits in the digital era: opportunities risks and challenges. *EuroMed Journal of Business*, 15, 205-217.
20. Mancini, D., Lamboglia, R., Castellano, N. G. & Corsi, K. 2017. Trends of Digital Innovation Applied to Accounting Information and Management Control Systems. *Reshaping Accounting and Management Control Systems*.
21. Marshall, T. & Lambert, S. 2018. Cloud-Based Intelligent Accounting Applications: Accounting Task Automation Using IBM Watson Cognitive Computing. *Journal of Emerging Technologies in Accounting*, 15, 199-215.
22. MArtić, V., Lalević-filipović, A. & Radović, M. 2017. XBRL Implementation in the Banking Sector in Montenegro. *Journal of Central Banking Theory and Practice*, 6, 5-22.
23. Melnychenko, S., Volosovych, S. & Baraniuk, Y. 2020. Dominant Ideas of Financial Technologies in Digital Banking. *Baltic Journal of Economic Studies*, 6.
24. Michael Bromwich & Scapens R. 2016. Management Accounting Research: 25 years on. *Management Accounting Research*, 31, 1-9.
25. Moll, J. & Yigitbasioglu, O. 2019. The role of internet-related technologies in shaping the work of accountants: New directions for accounting research. *The British Accounting Review*, 51.
26. Mosteanu N. & Faccia A. 2020. Digital Systems and New Challenges of Financial Management – FinTech, XBRL, Blockchain and Cryptocurrencies. *Quality-access to Success*, 21, 159-166.
27. Oesterreich, T. & Teuteberg, F. 2019. The role of business analytics in the controllers and management accountants' competence profiles. *Journal of Accounting & Organizational Change*, 15, 330-356.
28. Perdana, A., Robb, A., & Rohde, F. 2019. Textual and contextual analysis of professionals' discourses on XBRL data and information quality. *International Journal of Accounting and Information Management*, 27, 492–511.
29. Pirrong, C. 2019. Will Blockchain Be a Big Deal? Reasons for Caution. *Journal of Applied Corporate Finance*, 31, 98-104.

30. PRISMA. [Online]. Available: <http://prisma-statement.org/>. [Accessed: 22-Oct-2019].
31. Quattrone, P. 2016. Management accounting goes digital: Will the move make it wiser? *Management Accounting Research*, 31, 118-122.
32. Schiavi, G., Momo, F., Maçada, A. & Behr, A. 2020. On the Path to Innovation: Analysis of Accounting Companies' Innovation Capabilities in Digital Technologies. *Review of Business Management*, 22, 381-405.
33. Sekkal, H., Amrous, N. & Bennani, S. 2019. Knowledge Management and Reuse in Virtual Learning Communities. *International Journal of Emerging Technologies in Learning (iJET)*, 14.
34. Severini, F., Pretaroli, R., Socci, C., Zotti, J. & Infantino, G. 2020. The suggested structure of final demand shock for sectoral labour digital skills. *Economic Systems Research*, 32, 502-520.
35. Korhonen T., Selos E., Laine T. & Suomala P. 2020. Exploring the programmability of management accounting work for increasing automation: An interventionist case study. *Accounting, Auditing & Accountability Journal*.
36. Pashaeva I., Aliyeva M., Atakishiyeva N., Babashirinova, E. & Musayeva N. 2020. Digital Models of Income and Expenditure Management and Accounting. *TEM Journal*, 590-600.
37. Waweru, N. 2010. The origin and evolution of management accounting: a review of the theoretical framework. *Problems and Perspectives in Management*, 8, 165-182.
38. Yunus Y., Aman A. & Keliwon, K. 2019. The Role of Business Leaders in Information Technology Innovation in the New Era of Disruptive Technology. *Asian Journal of Accounting and Governance*, 12, 133–142.
39. Zhang, W., Chen, R.-S., Chen, Y.-C., Lu, S. Y., Xiong, N. & Chen, C.-M. 2019. An Effective Digital System for Intelligent Financial Environments. *IEEE Access*, 7, 155965-155976.
40. Zhyvets, A. 2019. Evolution of Professional Competencies of Accountants of Small Enterprises in the Digital Economy of Ukraine. *Baltic Journal of Economic Studies*, 4.

## **PARTICIPATION OF AZERBAIJAN IN THE WTO: PROBLEMS AND PROSPECTS**

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### **ABSTRACT**

*The changes that took place in the world after 1991, as well as the intensified development of the process of globalization in various fields, greatly influenced both the international position of Azerbaijan and the internal situation in the country. In connection with a fundamentally new course towards "opening" the Azerbaijani economy and its integration into the system of world economic relations, liberalization of all forms of foreign economic activity, the urgency of the problem of ensuring the national interest of Azerbaijan in the context of globalization increases. The problem of ensuring foreign economic security for the national interest of Azerbaijan in the context of globalization is not presented in detail in the works of domestic authors. The lack of full-fledged scientific papers on the above issues determines the need to consider these problems within the framework of the work. Globalization and national interests attract the attention of not only state bodies, but also a researcher of academic institutions and universities in Azerbaijan. This topic is relevant throughout Azerbaijan for everyone interested in the public economy. The growing interest in Azerbaijan's foreign trade is observed abroad, as well as in a number of international organizations, including those in which Azerbaijan does not yet participate (for example, the WTO). Although joining the WTO has now become one of the priority tasks (from the point of view of national interest) of the country's government. Naturally, the relevant issues are extremely relevant, taking into account also their significance and the prospective impact of one or another of their solutions on our economy. Accordingly, the author's goal - to determine measures to ensure the national interests of Azerbaijan in international economic relations - defines the scientific tasks that he set for himself: study of the regulation of our foreign trade; consideration of the problems of Azerbaijan's relations with the WTO. This work has a novelty in many works of Azerbaijani scientists, Azerbaijan's membership in the WTO was considered mainly from a political point of view, and not an economic one. Our work focuses on the pros and cons of Azerbaijan's participation in the WTO, unresolved issues and prospects. Particular attention is paid to the problems of Azerbaijan's accession to the WTO, taking into account both its increased relevance and the expected impact of this step on the domestic economy. We believe that this work will be useful to everyone who is interested in Azerbaijan's national security, foreign and trade policy.*

**Keywords:** *Globalization and national interests, WTO, foreign and trade policy of Azerbaijan*

### **1. INTRODUCTION**

As of October 2020, WTO members in the post-Soviet space are Armenia, Georgia, Kazakhstan, Kyrgyzstan, the Republic of Moldova, the Russian Federation, Tajikistan and Ukraine. Azerbaijan, Belarus and Uzbekistan have been in the process of joining the WTO for more than 20 years, and Turkmenistan submitted an application only in 2020.

Azerbaijan is a member of many international economic organizations. Azerbaijan's representation in international economic organizations and close cooperation with these organizations further accelerate its integration into the world economy. At present, Azerbaijan intends to become a member of the World Trade Organization (WTO). The WTO plays an important role in the development of the world economy, the expansion and dynamic growth of world trade and the maintenance of a competitive environment in the world market. It is expected that Azerbaijan's membership in the WTO will further expand the country's foreign economic relations, accelerate the development of foreign trade and its integration into the world economy. It is very important to determine precisely the problems that Azerbaijan may face in connection with its membership in this organization, and the benefits to be gained, is the subject of serious research, and awareness of these problems is of great importance. In order to speed up the process of accession to the WTO, by the Order of the Cabinet of Ministers of the Republic of Azerbaijan dated August 22, 2003 No. 175s, a Commission was established to prepare for the accession of the Republic of Azerbaijan to the WTO. Also, the Department of Trade Policy and the WTO operates in the Ministry of Economy of the Republic of Azerbaijan.

## **2. GOALS AND OBJECTIVES OF AZERBAIJAN'S MEMBERSHIP IN THE WTO**

Azerbaijan submitted its application for membership in the World Trade Organization (WTO) to the WTO Secretariat on June 23, 1997. The Working Group on Azerbaijan, established on July 16, 1997, includes 42 states. The working group is chaired by Ambassador Walter Werner, Permanent Representative of the Federal Republic of Germany to the WTO. The first meeting of the Working Group took place on June 3-7, 2002 in Geneva. At the first meeting with the participants on the memorandum on foreign trade regime, Azerbaijan was recommended to submit the following documents:

- proposals for customs tariffs (inapplicable tariffs, applicable high tariff rates);
- proposals for domestic assistance and export subsidies to the agricultural sector;
- proposals for trade in services;
- information on technical barriers to trade, sanitary and phytosanitary measures;
- information on trade-oriented aspects of intellectual property rights.

The main goals of membership in the World Trade Organization are:

- acceleration of the process of integration into the world economic system;
- use of benefits from privileges provided by WTO member countries to each other;
- carrying out trade operations with most countries of the world in accordance with the general rules adopted by the WTO;
- achieving an increase in assistance to economic reforms carried out in the country from international organizations, as well as from developed countries;
- attracting more foreign direct investment after the implementation of the WTO rules;
- the possibility of using the WTO dispute settlement mechanism.

The objectives of the Azerbaijani government are as follows:

- providing developing countries (DCs) with various types of assistance (in terms of animal and plant health standards, technical standards, telecommunications, etc.);
- setting a limit for subsidizing agriculture (de minimis) at the level of 10%, provided for developing countries (5% for developed countries);
- recognition of the importance of taking into account the special needs of developing countries in the development and implementation of technical regulations, standards, quality assessment procedures and sanitary and phytosanitary measures in accordance with the Agreement on Technical Barriers to Trade.



- providing developing countries with technical assistance provided for by the agreement on technical barriers to trade and the WTO agreements, etc.

Negotiations on Azerbaijan's accession to the WTO continue. Thus, Azerbaijan cooperates with the WTO as an observer.

## **2.1. Activities of the Commission on Preparation for Azerbaijan's Accession to the WTO**

In order to speed up the process of accession to the WTO, by the Order of the Cabinet of Ministers of the Republic of Azerbaijan dated August 22, 2003 No. 175s, a Commission was established to prepare for the accession of the Republic of Azerbaijan to the WTO. By the order of the Cabinet of Ministers of the Republic of Azerbaijan dated December 27, 2019 No. 821s, a new composition of the Commission for preparation for the entry of the Republic of Azerbaijan into the World Trade Organization was approved. The commission includes deputy ministers of the relevant ministries, senior officials of state committees and agencies.

## **2.2. Bilateral negotiations**

In the process of joining the WTO, the Republic of Azerbaijan conducts bilateral negotiations with 22 members (USA, European Union, Canada, Japan, Norway, Russian Federation, Brazil, South Korea, Ecuador, Taiwan Province (China), Sri Lanka, India, Switzerland, Honduras, Indonesia, Malaysia, Dominican Republic, Saudi Arabia, China, Paraguay, Vietnam, Thailand). During the negotiations, the issues of Azerbaijan's access to the market for goods and services are being discussed, and the necessary measures are being taken to protect areas of particular importance. As a result of bilateral negotiations, the first protocol was signed with Turkey in 2007, the following protocols - in 2008 with Oman and the United Arab Emirates, and in 2010 - with Georgia. The latest bilateral protocol was signed on March 30, 2012 with the Kyrgyz Republic. Thus, the number of protocols signed by Azerbaijan on the completion of bilateral negotiations within the WTO accession process has reached five. It should be noted that the interests of Azerbaijan are fully secured in the signed protocols. On the basis of bilateral appeals, analyzes are regularly carried out in the field of goods and services. The last time on December 16-20, 2019, bilateral negotiations with Canada, Ecuador, South Korea, Thailand, Indonesia and Japan were held in Geneva, including extensive discussions and consultations with members of the Cairns Group on Agriculture (Cairns Group - a group of countries - exporters of agricultural products) by the level of domestic support. After negotiations from Canada, South Korea, Thailand and Ecuador, applications for goods were received, which are currently being considered in conjunction with the relevant authorities. At the request of the Canadian side, together with the Food Safety Agency of the Republic of Azerbaijan, a number of information on sanitary and phytosanitary measures (SFS) was prepared and presented to the other side.

## **2.3. Adaptation of legislation to WTO requirements**

The "Action Plan" approved by the Order of the President of the Republic of Azerbaijan dated August 2, 2006 No. 1583 provides for 39 normative legal documents. Of these, the laws "On plant quarantine" and "On plant protection" have lost their force, according to other 37 laws, 18 normative legal documents have been adopted. Currently, 10 draft documents have been prepared and agreed with the relevant authorities, as well as the Law of the Republic of Azerbaijan "On standardization" dated May 17, 2019 No. 1587-VQ and the Law of the Republic of Azerbaijan "On technical regulation" dated September 30, 2019 No. 1669-VQ. In addition, 10 projects are planned to be developed. The Law of the Republic of Azerbaijan "On Standardization" entered into force on 14.10.2019, the Law of the Republic of Azerbaijan "On Technical Regulation" - from 27.05.2020.

### **3. PROBLEMS THAT AZERBAIJAN WILL FACE IN JOINING THE WTO**

To become a WTO member, first of all, it is necessary to develop competitive local production. The fact is that the level of development of local production (especially the production of industrial products) is still not high enough to compete with final products and services on the world market. At the same time, Azerbaijan has great potential for the development of agriculture. The reforms carried out in the agricultural sector of Azerbaijan in recent years suggest that in the near future the country will be able to export more and more competitive agricultural products to the world market. The WTO offers member countries special benefits in the agricultural sector, and Azerbaijan will also be able to take advantage of these benefits. Thus, when joining the WTO, the current situation of countries is differentiated and some conditions are adapted to this situation. According to these conditions, tariff concessions include the volume of export subsidies during the transition period and in agriculture. WTO membership does not deprive states of the ability to protect their domestic markets. Membership in this organization does not mean an immediate reduction in tariffs. Thus, it is not expected that Azerbaijan will reduce tariffs soon after joining the WTO. Customs tariffs are determined on the basis of bilateral negotiations, and some customs tariffs may be increased. On the other hand, in the course of negotiations, “fixed tariffs” (“fixed tariffs”) are established, and the state must take preventive measures against future tariffs. At the same time, ensuring by the state that the real exchange rate of the national currency is lower than that of foreign currencies can lead to an increase in domestic production due to an increase in export demand. A second important issue relates to the relative quota applied to the amount of agricultural export subsidies. This quota provides subsidies for developing countries in the amount of 10% of total agricultural production and for developed countries in the amount of 5%. According to this condition, Azerbaijan can take advantage of a 10% discount. As noted above, there is significant direct and indirect support to the agricultural sector in Azerbaijan at present, and the issue of assessing the volume of this support and whether it exceeds the quota limit needs to be investigated separately. When agricultural subsidies differ in partner countries, this negatively affects trade in general. The main requirement of the Uruguay Round was the regulation and reduction of domestic aid.

### **4. CONCLUSION**

Thus, Azerbaijan's membership in the WTO is very important for ensuring sustainable economic development. Azerbaijan has a large enough potential to join the WTO, but in the first years of membership it will inevitably face certain problems. Therefore, in order to accurately determine the problems that Azerbaijan may face in connection with its membership in this organization, and the benefits received, it is necessary to conduct in-depth studies and take appropriate preventive measures to timely eliminate the problems. To speed up the process of accession to the WTO, it is necessary to create a special body that will determine the country's promising interests in all areas within the framework of the WTO multilateral agreements, take them into account in negotiations and develop an appropriate policy for the preparation of an Action Plan for the admission of the Republic of Azerbaijan to the WTO. In principle, the action plan of this body should reflect recommendations in the following areas:

- strengthening the sectoral approach to the development of industrial sectors in the country (taking into account the prospective development of the country's economy and the international division of labor);
- focusing on ensuring the most favorable conditions in the future for the sectors, the formation and development of production of which in the country is possible (for example, privileged industrial parks, industrial districts, free economic zones, etc.) and a thorough study of industry initiatives;

- revision of customs tariffs for raw materials and components imported into the country for the needs of all industries, especially mechanical engineering, light and food industries (in the direction of reducing the tariff rate);
- accelerating the process of privatization of a number of medium and large state industrial enterprises that remain in state ownership, increasing attention towards taking measures to revive privatized enterprises;
- prevention of monopoly and ensuring fair competition for all entrepreneurs;
- formation of an information bank and a system for foreign trade of the state, especially in the field of legal and economic information (clarification of the mechanism for resolving disputes, monitoring the price situation, etc.);
- achieving the highest possible customs tariffs and a longer transition period;
- protection of manufacturing industries related to the agricultural sector, which are less competitive than imported goods;
- an attempt to re-obtain the right to negotiate on certain items, being a member of the WTO (as you know, this right allows you to resume negotiations and sign a protocol between interested parties on these items every 3 years);
- achieving the maximum build-up of the Green Box and Yellow Box measures;
- striving to achieve the level of subsidies in the amount of 10 percent of gross agricultural production;
- accelerating the implementation of comprehensive measures to further improve the investment environment in the country (adoption of a new law on the protection of investments and the rights of investors, ensuring the rule of law, eliminating factors holding back investors, etc.);
- achieving an extension of the transition period, which allows the introduction of national regulatory regimes;
- creation of exchanges for convenient and efficient sale of agricultural products;
- the definition of a strategic agricultural product or product and product or food processing products to benefit from benefits in the WTO (this can be cotton, tobacco, sugar beets, olives, wine, etc.);
- development of perfect legislation on competition and investment in order to accelerate the process of membership in the WTO.

It should be noted that a number of reforms have recently been carried out in Azerbaijan, including the adoption of 12 strategic road maps for the development of the economy, changes have been made to the regulation of the trade sector, the system of import tariffs, and the trade and logistics infrastructure has been improved. It is expected that the implementation of the roadmaps will become the basis for the successful election of Azerbaijan to the WTO. Accordingly, after the initial results are obtained from economic reforms, which are expected to be carried out in the country by 2020, the intensification of negotiations and completion of the process of Azerbaijan's accession to the WTO is possible. To strengthen the position and desires of the country during the negotiations on WTO membership, such issues as the leading role of agriculture in the country's economy, the presence of good traditions in the agricultural sector, favorable agro-climatic resources for the development of this industry, the fact that more than half of the population lives in rural areas. In the WTO lexicon, measures of domestic support for agriculture mean the provision by the state of agriculture and economic entities operating in this area, subsidies or other support. However, it is important to observe certain restrictions when implementing these measures. During the negotiations, it is necessary to take into account the need to adapt newly created farms in Azerbaijan to market conditions and the importance of state support for agriculture in order to stimulate domestic production.

This is important from the point of view of increasing the competitiveness of agricultural products and maximizing the satisfaction of domestic demand through local production.

#### LITERATURE:

1. Воронин Б.А., Чупина И.П., Воронина Я.В.(2020). Россия и ВТО: риски, потери и приобретения // Аграрное образование и наука. 2020. № 3. С. 2.
2. Чернышева Н.А.(2019). Модель отношений ВТО со странами с переходной экономикой // Экономика и управление: проблемы, решения. 2019. Т. 4. № 2. С. 13-16.
3. Загашвили В.С. (2019). Застой в ВТО как проявление кризиса глобализации // Мировая экономика и международные отношения. 2019. Т. 63. № 6. С. 5-12.
4. Епанешников В.К (2020). ВТО: контуры перемен // Международная жизнь. 2020. № 2. С. 64-69.
5. Мулярец С.А. (2019). Россия в ВТО: ожидание и реальность// Экономика и предпринимательство. 2019. № 2 (103). С. 77-81.
6. Мамедов З.Ф. (2020). Экономическое сотрудничество КНР с Азербайджаном в рамках программы «один пояс — один путь» Экономический рост республики Беларусь: глобализация, инновационность, устойчивость XIII Международной научно-практической конференции. Минск, 14 мая 2020 года
7. Muradov A.D. (2012). Azerbaijan's accession to the WTO: its proposals on the service sphere are more liberal than the commitments of WTO members // Central Asia and the Caucasus № 1.
8. Mamedov Z. F. (2020) One belt and one road: participation and role of Azerbaijan in the implementation of the megaproject // 55th International Scientific Conference on Economic and Social Development, Baku, Azerbaijan.: 25 June 2020. Book of Proceedings Vol. 2/4 (Web of Science Core Collection). P 406-412.
9. Мамедов З.Ф. Банковский сектор Азербайджана: новые тренды и перспективы // Российский научный журнал (РНЖ) «Экономика и управление». 2020. - Том 26. № 7. С.775-783
10. Чернышева Н.А. (2019) Помощь ВТО развивающимся странам в наращивании торгового потенциала// Экономика и управление: проблемы, решения. 2019. Т. 1. № 3. С. 14-17.
11. Оболенский В.П. (2019). Камни преткновения на пути реформирования ВТО // Мировая экономика и международные отношения. 2019. Т. 63. № 8. С. 13-20.
12. Сумин А.В. (2019). Актуальные вопросы участия России в международной торговле объектами интеллектуальной собственности в условиях ВТО // Экономика и управление: проблемы, решения. 2019. Т. 11. № 3. С. 4-10.

# THE IMPORTANCE OF NON-FINANCIAL INFORMATION QUALITY FOR THE PERFORMANCE OF PORTUGUESE COMPANIES

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## ABSTRACT

*Financial reporting and accounting are moving away from traditional procedures and increasingly covering non-financial information. This study aims to analyse the importance of non-financial information quality for successful decision making and, consequently, for relevant non-financial performance. An online questionnaire was developed and applied to managers of Portuguese companies. The evaluation of the theoretical model was performed using the statistical software AMOS, applying the structural equation model technique. Based on a sample of 381 Portuguese companies, the results provide enough evidence to suggest that non-financial information quality contributes positively to non-financial performance, increasing the odds of managers' decisions to be made successfully. The existing literature is mainly focused on the quality of financial information, while this study can be considered seminal, as it empirically demonstrates that non-financial information quality contributes favourably to the success of companies in Portugal.*

**Keywords:** *Non-financial information quality, Decision-making success, Performance evaluation, Non-financial performance, Portugal*

## 1. INTRODUCTION

The internationalization of companies, the globalization of the market, the increase in competition, the influence of the economic environment in which companies operate together reinforce the importance of accounting information for company management. The information provided by accounting should respond to some attributes of qualitative origin, given that qualitative characteristics are those attributes that make the information provided in the financial statements useful to long range stakeholders. The main qualitative characteristics are understandability, relevance, reliability, and comparability. Thus, financial information is useful when it combines the qualitative characteristics of information and is useful for decision making (Sari, Afifah, Susanto & Sueb, 2019). The stakeholders, in addition to financial information, emphasize the relevance of non-financial information in decision-making (Eccles,

Serafeim & Krzus, 2011; Haller, Link & Groß, 2017). Fernando, Li and Hou (2020) mention that, in both emerging and mature markets, companies must prepare and disclose these two types of information to decision makers. In fact, non-financial information has received increasing attention from organizations (Ahmad & Zabri, 2016). Previous research suggest that the decision-making process is influenced, among other aspects, by the culture, beliefs, values, personality, knowledge, and perception of the decision maker(s) (Ratcliff, Philiastides & Sajda, 2009; Delazer et al., 2011). Furthermore, financial and non-financial information quality is extremely important in the decision-making process and can determine its success (Boulianne, 2007; Barker and Eccles, 2018). On the other hand, the literature suggest that decision-making success has a positive impact on business performance (Bosworth, 2005; Patel, 2015; Phornlaphatrachakorn, 2019). In this context, this study aims to develop and test a model in order to analyze the influence of the quality of financial information on the success of Portuguese companies. Specifically, this research aims to analyze: (1) the direct impact of the quality of non-financial information on non-financial performance; (2) the direct impact of the quality of non-financial information on the success of decision-making and (3) the direct impact of the success of decision-making on non-financial performance. This study covers a gap in the literature, given that, through empirical evidence, it reinforces the importance of the quality of non-financial information for the success of decision-making and non-financial performance. This paper is structured as follows. The next section presents the theoretical framework and research model. Next follows the methodology section and results is explained. Finally, the conclusions, contributions and limitations of the research are presented, as well as future lines of investigation.

## 2. THEORETICAL FRAMEWORK AND RESEARCH MODEL

According to Gilantier and Underdown (1981) and Ibrahim et al. (2020), accounting is moving away from traditional procedures, also emphasizing the importance of non-financial information. According to Muserra, Papa and Grimaldi (2020), in recent years, the dissemination of non-financial information in Europe has been the subject of several initiatives by the European Commission (Directive 2003/51 / EC and Directive 2014/95 / EU), national legislators and professional accounting organizations. according to Grewal, Riedl and Serafeim (2019), in the last decades there has been an increase in the number of companies that disclose non-financial information. This fact, which is due, according to the authors, to pressure from stakeholders. However, for Grewal et al. (2019), this increase is mainly due to the increase in the number of legislations around these issues. Until the entry into force of Decree-Law 89/2017, the disclosure of non-financial information was voluntary. However, this Decree-Law, which derives from a European orientation, came to impose the disclosure of non-financial information by some Portuguese companies. In accordance with Article 66 B, No. 1, and Article 508 G, No. 1, of Decree-Law 89/2017, large companies, and the parent companies of a large group, which have the statute of public interest entities and, on average, more than 500 workers, must, as of 2018, present an annual non-financial statement, which may be included in the management report or presented in a separate report. Thus, this Decree-Law obliges some Portuguese companies to disclose INF, which until then was optional. However, Hoffmann, Dietsche and Hobelsberger (2018) state that the disclosure of non-financial information has been mandatory in other countries (Denmark, Norway, Sweden, Australia, and the Netherlands) since the 1990s. This fact may have contributed to an increase in the level of disclosure of non-financial information. Stakeholders are interested in non-financial information because they face challenges with regard to accessing information considering relevant, reliable, complete and comparable (Barker and Eccles, 2018). However, there are no standardised qualitative characteristics for non-financial information, unlike financial information. However, Rezaee and Tuo (2017) classify non-financial information by the existence of true, complete, and timely

information. In order to ensure the efficiency and effectiveness of activities, the reliability of information and compliance with applicable laws, companies need adequate internal control (Frazer, 2020; Campbell, Li, Yu & Zhang, 2016). Several studies have emerged with the aim of assessing the relevance of corporate non-financial information to business performance (Orens and Lybaert, 2010). According to Omondi-Ochieng (2019) and Karamoy and Tulung (2020), financial performance is one of the indicators that shows the effectiveness and efficiency of an organization in reaching its financial goals. However, Pinto, Tonini, Yoo and Katayose (2020) mention that the indicators of non-financial performance are not, in themselves, sufficient to assess the performance of an organization. This is due, according to Zigan and Zeglat (2010), to the fact that these indicators do not allow verifying business performance and the company's strategy and may be unrealistic in the long run. Therefore, the authors reveal that it is necessary to observe the non-financial performance indicators in order to have a complete view of the company's performance. The literature suggests that non-financial performance reflects the result of employee efficiency, improved product and service quality, employee turnover and satisfaction, as well as customer satisfaction (Sanjaya, 2020). The literature suggests that non-financial performance reflects the result of employee efficiency, improved product and service quality, employee turnover and satisfaction, as well as customer satisfaction (Sanjaya, 2020). In the respect, Callen, Gavius and Segal (2010, p. 61) find that non-financial information is relevant in explaining annual returns, share prices and investment grade by investors (long-term) and that “non-financial variables are value relevant after controlling for financial variables suggesting that the two types of variables are complements. Thus, in this study, the first research hypothesis is formulated:

- *H1 – The quality of non-financial information has a positive and direct impact on non-financial performance?*

Non-financial indicators can satisfy the existing gap in terms of information needed for decision-making (Laskin, 2016). Gal and Akisik (2020, p. 1236), state that ‘*although financial statement information is value relevant, there is evidence that shareholders also consider nonfinancial information in their evaluation of firms' value*’. Ahmad and Zabri (2016) add that the use of this type of information can contribute to a better assessment of the company. Regarding the reporting of non-financial information, in addition to companies being able to disclose non-financial information in management reports, Jastrzebska (2016) states that there are two main means of disclosing non-financial information, sustainability or social responsibility reports and integrated reporting. With Directive 2014/95 / EU, some companies are required to disclose non-financial information in a Non-Financial Statement together with the financial statements or in a separate report. Ježovita (2015), when analyzing 320 Croatian companies, concluded that the information available in the annual reports is important in the decision-making process. Decision-makers need information to support their choices, that is, information of a qualitative and quantitative nature (Smith, 2020). This author mentions that the largest number of data, in real time, can help the decision maker to make the best choices. However, Elvisa and Ilgün (2015) state that the type of information the user needs will be according to their role in the organization. Thus, the authors mention that there are three levels of management:

- Strategic management (top) needs diverse and concise information, often oriented towards the future.
- Intermediate (tactical) management requires more detailed information than strategic management and for a shorter period.
- Operational Management requires detailed information on a daily basis.

Decision making differs in many ways and varies depending on some aspects related to the information needed (i.e., the quantity, complexity, and accuracy of the information) and the complexity of the process to obtain that information (Athanasou & Perera, 2019). This is because not all the information that is needed is always easy to access, and / or is available in due time by companies, especially regarding non-financial information. So, different situations require different ways to process the best decision (Gati & Levin, 2014). Successful decision-making depends on the ability of business decision-makers to successfully manage problems (White, Pothos & Busemeyer, 2015). Therefore, the literature suggests that non-financial information is important and determines Decision-Making Success (Barker and Eccles, 2018). In this context, the second research hypotheses of this research formulated:

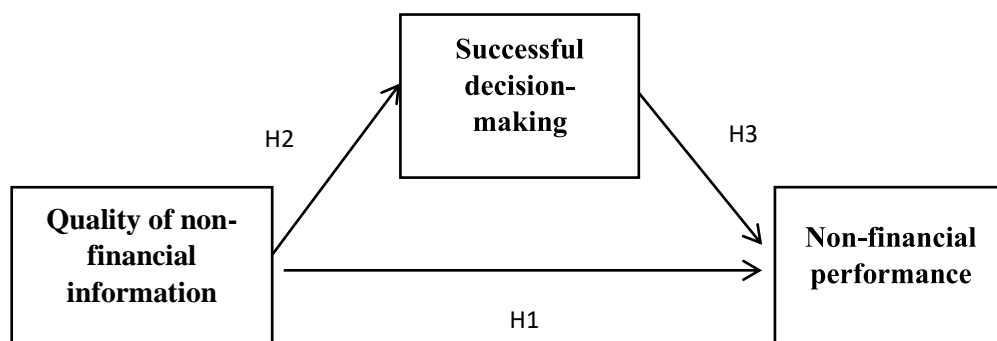
- *H2 – The quality of non-financial information determines the success of decision-making?*

The preparation of non-financial information depends on the need for this type of information to make decisions. On the other hand Flöstrand and Ström (2006) refers that the importance attributed to non-financial information is related to the company's size and that the use of non-financial information is related to the level of non-financial information. In this context, Elshabasy (2018) argues that companies that attribute usefulness to non-financial information are the best performers, that is, once, companies with better non-financial performance are the most likely to disclose non-financial information. Ježovita (2015), when analyzing 320 Croatian companies, it is concluded that the information available in the annual reports is important in the decision-making process. The literature review suggests that decision making process, based on financial information, which brings together qualitative characteristics, can determine business success. Although there is no empirical evidence, we expect that non-financial information, if of quality, can contribute to the non-financial performance of companies. In this sense, the third research hypothesis is formulated:

- *H3 – Successful decision-making has a positive impact on non-financial performance?*

Figure 1, shown below, presents the conceptual model designed for this research.

*Figure 1: Conceptual model*



### 3. METHODOLOGY

In this study, a questionnaire survey was developed using the Lime Survey software. After duly tested in managers and academics, we send the link to the survey by email to the managers of Portuguese companies. The selection process of the sampling was carried out in the SABI database, applying the following 5 filters: (1) all companies with an e-mail address (Portugal); (2) last number of employees: minimum 50; (3) audited companies; (4) companies, whose legal form is: sole proprietorship, foreign entity, corporation, limited partnership, limited liability company and sole proprietorship; and (5) active companies.



The SABI database generated a list of 7,812 Portuguese companies. Despite being a substantial number, was decided to apply the survey to all companies instead of limiting the study to a region or district in the country. This option is because this study is applied to company managers and there is a probability of obtaining a reduced response rate. In a total of 7,812 e-mail sanded, from 2 to 31 March 2020, 389 complete observations valid observations were considered in this study. Given the high number of Portuguese companies, we work with a non-probabilistic sample, which is practical in scientific studies covering a very large population (e.g., Cepêda and Monteiro, 2020). Regarding the structure of the survey, it is divided into two parts. The first part includes questions regarding the characterization of the company. The second part includes items that allow to evaluate each of the dimensions under study. In assessing the quality dimension of non-financial information, we used the scale (adapted) by Dornier (2018), except for the item “The non-financial information is free of value judgements”, which resulted from the application of the pre-test. Regarding the success of decision-making, the assessment of this dimension follows the measurement scale used by Phornlaphatrachakorn (2019). Only the following item was added that derives from the pre-test of the questionnaire: “the decisions made in the company determine its success”. The scale for measuring non-financial performance is adapted from Soudani (2012). All items were evaluated on a 5-point Likert scale, where 1 corresponds to “totally disagree” and 5 corresponds to “totally agree”. Before proceeding with the analysis of the Structural Equation Model (SEM), we carry out a preliminary analysis of the data, namely the missing data, the outliers, the central tendency and the normality and sample size. After being properly processed, the data was subjected to SEM analysis, which involves two phases: the evaluation of the measurement model and evaluation of the structural model.

## 4. RESULTS

### 4.1. Sample

Regarding the distribution of companies by district, as can be seen in figure 2, 111 companies (29.1 %) are based in the district of Lisbon, 67 (17.6 %) in Oporto and 41 (10.8 %) in the district of Aveiro. These 3 districts represent 57.5 % of the sample. Therefore, 42.5 % of the companies are distributed in the remaining 14 districts or autonomous regions of Portugal.

*Figure 2: Distribution of companies by districts and autonomous regions*



Regarding the activity of a given sector, 160 companies (42 %) have as their object the provision of services, 126 (33 %) and 43 (14 %) companies develop industrial and commercial activities, respectively, and 42 (11 %) of the respondents selected the option ‘other’. Most of the companies (83.2 %) are medium or large, and the remainder are small companies (16.8 %).

#### 4.2. Conceptual model evaluation

In order to assess the adequacy of the measurement scales, we assessed the unidimensionality of the measures, the reliability and the validity (convergent and discriminant) of the construct's measurement scales. Table 1 presents the items that resulted from the confirmatory analysis performed in the AMOS software. The results indicate that all items report significantly to the respective factor, thus highlighting the unidimensionality of the dimensions under analysis (Marôco, 2010). The results also show the reliability and validity (convergent and divergent) of the measurement scales through the composite reliability ( $>0.70$ ), average variance extracted ( $>0.60$ ) and standardized coefficients ( $>0.50$ ) (Marôco, 2010; Steenkamp and van Trijp, 1991; Fornell and Larcker, 1981).

*Table 1: Measurement model results*

Construct	Sc
<b>Non-Financial Information Quality (CR = 0.912, AVE = 0.598)</b>	
The non-financial information is carefully prepared to ensure its quality.	.804*
The non-financial information is easily understood by its user.	.846*
The non-financial information includes all the information necessary to make decisions.	.735*
The non-financial information is free of value judgements.	.701*
<b>Decision-Making Success (CR = 0.948, AVE = 0.733)</b>	
The decisions made allowed the company to achieve advantages in terms of operations, management and performance.	.853*
Decisions made about investments took into account different alternatives or options, which allowed the company to choose the best solution.	.832*
The decisions taken have contributed to maximise efficiency and increase operational effectiveness.	.914*
The decisions made in the company determine its success.	.770*
<b>Non-Financial Performance (CR = 0.928, AVE = 0.645)</b>	
The company has improved its customer service.	.792*
The company has improved working conditions, regardless of the employee's position.	.850*
The company has improved its performance in terms of social responsibility (voluntary effort on the part of the company in the creation of various measures to meet the expectations of the different interested parties - stakeholders).	.842*
The company has increased its employee retention rates.	.721*

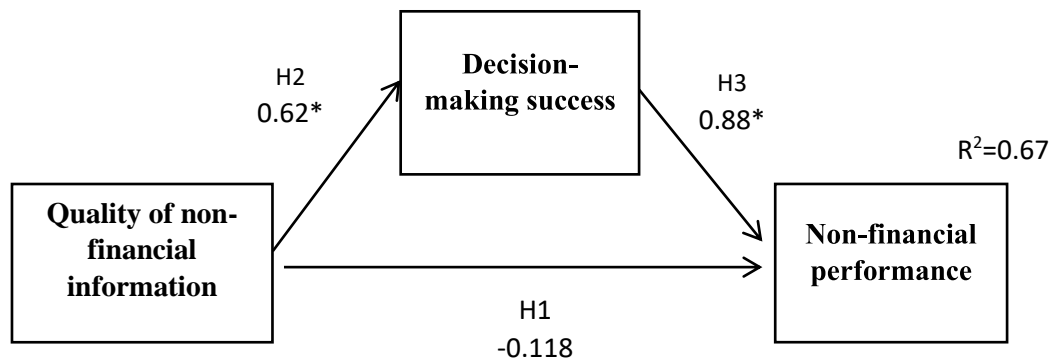
Notes: Sc, Standardised coefficients; CR, composite reliability; AVE, average variance extracted.

\*Correlation is significant at the 0.001 level.

The goodness-of-fit indices indicate that the initial theoretical model has an adequate fit ( $\chi^2=199,18$  (55),  $p=.000$ , CFI=.95, GFI=.93, NFI=.90, RMSEA=.08). The results of this study indicate that non-financial information quality has no significant impact on the non-financial performance of Portuguese companies. However, this variable contributes positively to successful decision making ( $\beta=0.62$ ;  $p<0.001$ ), which determines 32 % of its variance. In turn, the success of decision making has a positive and significant impact on non-financial performance ( $\beta=0.88$ ;  $p<0.001$ ). Thus, in this study, the results rejected the H1 and supported H2 and H3. In addition, we conclude that both non-financial information quality and decision-making success determine 67% of the dependent variable (non-financial performance). Figure

3 presents the standardised coefficients and the significance level for each relationship postulated in the model, as well as the coefficient of determination for each construct.

Figure 3: Structural model



Note: \* Significant at the <0.001 level

## 5. CONCLUSIONS AND DISCUSSION

The competitive environment increasingly creates new challenges to organizations (Pinto, Tonini, Yoo & Katayose, 2020). These challenges should be strategically addressed in order to allow achieving a better performance. The literature suggests that accounting information, if of quality, helps decision making. In recent years, there has been an increasing number of studies focusing on non-financial information, although more focused on the reporting of non-financial information. However, there are arguments that decision making based on non-financial information is not sufficient in the decision-making process. In this sense, there are arguments that the quality of non-financial information, if used in decision making, can determine the success of companies in competitive markets. In this context, this study aims to assess the importance of non-financial information for the success of Portuguese companies. In Portugal, although the number of new enterprises is higher than the number of enterprises that fail, the number of unsuccessful enterprises remains worrying. Therefore, with this study, we expected to contribute to a better understanding of the factors that contribute to business success, emphasising the importance of non-financial information. Based on a sample of 381 Portuguese firms, we conclude that non-financial information quality has an impact on firms' non-financial performance and decisions are based on non-financial information and made successfully. Specifically, the results indicate that non-financial information quality has no direct and significant impact on firms' non-financial performance, which leads us to reject H1. Our result is not in line with the arguments of Callen et al. (2010). However, in this study we have empirical evidence that the quality of non-financial information contributes positively to successful decision-making, which leads to support H2. Our evidence is consistent with the arguments of Barker and Eccles (2018). Therefore, successful decision making has a positive and significant impact on non-financial performance, supporting the last research hypothesis (H3). This finding corroborates with the fundamentals of Elshabasy (2018). The literature review identified a gap that lies in the absence of studies that empirically analyse the importance of the quality of non-financial information for the success of companies. The results highlight the importance of non-financial information quality for successful decision-making and non-financial performance of Portuguese companies. Thus, this study is important for managers to the extent that it can alert them to the importance of the information produced by accounting that is moving away from traditional accounting to increasingly embrace information of a non-financial nature. Regarding the limitations of the study, the use of a convenience and non-probabilistic sample limits the generalization of the results.

In terms of future research, one can suggest including in the model new variables, such as the financial information quality and financial performance, in order to assess which of the two types of information has a greater impact on financial and non-financial performance.

## LITERATURE:

1. Athanasou, J. A., & Perera, H. N. (2019). International handbook of career guidance. In *International Handbook of Career Guidance* (second Edi). <https://doi.org/10.1007/978-3-030-25153-6>
2. Barker, R., & Eccles, R. G. (2018). Should FASB and IASB be responsible for setting standards for nonfinancial information? *Social science research network*, 4–40. Consultado em 10 abril 2020. Disponível em <https://doi.org/10.2139/ssrn.3272250>
3. Boulianne, E. (2007). Revisiting fit between AIS design and performance with the analyzer strategic-type. *International Journal of Accounting Information Systems*, 8(1), 1-16.
4. Bosworth, D. L. (2005). *Determinants of enterprise performance* (1 Edition). Consultado em 19 junho 2020. Disponível em <https://doi.org/10.1007/978-3-030-25153-6>
5. Callen, J. L., Gavius, I., & Segal, D. (2010). The complementary relationship between financial and non-financial information in the biotechnology industry and the degree of investor sophistication. *Journal of Contemporary Accounting & Economics*, 6(2), 61-76.
6. Campbell, S., Li, Y., Yu, J., & Zhang, Z. (2016). The impact of occupational community on the quality of internal control. *Journal of Business Ethics*, 139(1), 271–285
7. Cepêda, C. L. M., & Monteiro, A. P. (2020). The Accountant's Perception of the Usefulness of Financial Information in Decision Making – A Study in Portugal. *Revista Brasileira de Gestão de Negócios*, 22(2), 363–380.
8. Decreto-Lei 89/2017. Diário da República n.º 145/2017, Série I de 2017-07-28. Consultado em 15 abril 2020. Disponível em <https://dre.pt/home/-/dre/107773645/details/maximized> em 01/03/2020.
9. Delazer, M., Zamarian, L., Bonatti, E., Walser, N., Kuchukhidze, G., Bodner, T., ... Trinka, E. (2011). Decision making under ambiguity in temporal lobe epilepsy: Does the location of the underlying structural abnormality matter? *Epilepsy and Behavior*, 20(1), 34–37.
10. Dornier, P. (2018). Investigating the impact of comprehensive information systems on accounting information quality. *Electronic Business Journal*, 17(12), 1–15.
11. Eccles, R. G., Serafeim, G., & Krzus, M. P. (2011). Market interest in nonfinancial information. *Journal of Applied Corporate Finance*, 23(4), 113–127.
12. Elshabasy, Y. N. (2018). The impact of corporate characteristics on environmental information disclosure: an empirical study on the listed firms in Egypt. *Journal of Business and Retail Management Research*, 12(2).
13. Elvisa, B., & Ilgün, E. (2015). Impact of accounting information systems on decision making case of Bosnia and Herzegovina. *European Researcher*, 96(7), 460–470.
14. Fernando, J. M. R., Li, L., & Hou, G. (2020). Financial versus non-financial information for default prediction: evidence from Sri Lanka and the USA. *Emerging Markets Finance and Trade*, 56(3), 673–692.
15. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement. *Journal of Marketing Research*, 18(1), 39–50.
16. Frazer, L. (2020). Does internal control improve the attestation function and by extension assurance services? A Practical Approach. *Journal of Accounting and Finance*, 20(1), 28–38.
17. Gati, I., & Levin, N. (2014). Counseling for career decision-making difficulties: measures and
18. Gilantier, M. W. E., & Underdown, B. (1981). *Accounting, theory and principles* 1976. A Thiemann Inti, H37 South-West Pub. U.S.A.: Co. Cincinnati

19. Grewal, J., Riedl, E. J., & Serafeim, G. (2019). Market reaction to mandatory nonfinancial disclosure. *Management Science*, 65(7), 3061–3084
20. Haller, A., Link, M., & Groß, T. (2017). The term ‘non-financial information’ – a semantic analysis of a key feature of current and future corporate reporting. *Accounting in Europe*, 14(3), 407–429.
21. Hoffmann, E., Dietsche, C., & Hobelsberger, C. (2018). Between mandatory and voluntary: non-financial reporting by German companies. *Sustainability Management Forum*, 26, 47–63
22. Ibrahim, F., Ali, D. N. H., & Besar, N. S. A. (2020). Accounting information systems (AIS) in SMEs: Towards an integrated framework. *International Journal of Asian Business and Information Management*, 11(2), 51–67
23. Jastrzebska, E. (2016). Reporting of non-financial information as a stakeholder engagement method. *Research Paper of Wroclaw University of Economics*, (423), 61–78.
24. Ježovita, A. (2015). Accounting information in a business decision-making process – evidence from Croatia. *Zagreb International Review of Economics & Business*, 18(1), 61–79.
25. Karamoy, H., & Tulung, J. E. (2020). The effect of financial performance and corporate governance to stock price in non-bank financial industry. *Corporate Ownership and Control*, 17(2), 97–103.
26. Laskin, A. V. (2016). Nonfinancial information in investor communications. *International Journal of Business Communication*, 53(4), 375–397
27. Marôco, J. (2010). *Análise de Equações Estruturais - Fundamentos teóricos, Software e Aplicações*. ReportNumber.
28. Muserra, A. L., Papa, M., & Grimaldi, F. (2020). Sustainable development and the European union policy on non-financial information: an Italian empirical analysis. *Corporate Social Responsibility and Environmental Management*, 27(1), 22–31.
29. Omondi-Ochieng, P. (2019). Financial performance trends of United States Hockey Inc: a resource-dependency approach. *Journal of Economics, Finance and Administrative Science*, 24(48), 327–344.
30. Orens, R., & Lybaert, N. (2010). Determinants of sell-side financial analysts’ use of non-financial information. *Accounting and Business Research*, 40(1), 39–53.
31. Patel, S. B. P. (2015). Effects of accounting information system on organizational profitability. *International Journal of Research and Analytical Reviews*, 2(1), 72–76.
32. Phornlaphatrachakorn, K. (2019). Internal control quality, accounting information usefulness, regulation compliance, and decision- making success: evidence from canned and processed foods businesses in Thailand. *International Journal of Business*, 24(2), 198–215
33. Pinto, S. H. B., Tonini, A. C., Yoo, N. S. L., & Katayose, E. M. (2020). Gestão estratégica através do balanced scorecard (BSC): implantação em empresas brasileiras. *Brazilian Journals of Business*, 2(1), 564–580
34. Ratcliff, R., Philiastides, M. G., & Sajda, P. (2009). Quality of evidence for perceptual decision making is indexed by trial-to-trial variability of the EEG. *Proceedings of the National Academy of Sciences of the United States of America*, 106(16), 6539–6544
35. Rezaee, Z., & Tuo, L. (2019). Are the quantity and quality of sustainability disclosures associated with the innate and discretionary earnings quality?. *Journal of Business Ethics*, 155(3), 763–786.
36. Sanjaya, V. F. (2020). The mediating role of company non-financial performance and religiosity as a moderating variable between learning orientation and. *Jurnal Manajemen Bisnis Islam*, 1(1), 31–46.

37. Sari, N. Z. M., Afifah, N. N., Susanto, A., & Sueb, M. (2019). Quality accounting information systems with 3 important factors in BUMN Bandung Indonesia. *Advances in Social Science, Education and Humanities Research*, 343(1), 93–96.
38. Soudani, S. N. (2012). The usefulness of an accounting information system for effective organizational performance. *International Journal of Economics and Finance*, 4(5), 136–145.
39. Steenkamp, J. B. E. M., & van Trijp, H. C. M. (1991). The use of Lisrel in validating marketing constructs. *International Journal of Research in Marketing*, 8(4), 283–299.
40. White, L. C., Pothos, E. M., & Busemeyer, J. R. (2015). Insights from quantum cognitive models for organizational decision making. *Journal of Applied Research in Memory and Cognition*, 4(3), 229–238.
41. Zigan, K., & Zeglal, D. (2010). Intangible resources in performance measurement systems of the hotel industry. *Facilities*, 28(13/14), 597–610

## WINE WITH GRAVITY: SPARKLING VS STILL WINE

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### ABSTRACT

*Since its introduction by Jan Tinbergen in the late 1960s, the gravity model has become one of the most widely used models in empirical international trade analysis. The object of research in this paper is the wine trade due to the many changes it has faced in the last two decades, such as the globalization of the wine market and the increased competitiveness caused by the emergence of the "New World countries" in the world wine market. The aim of this paper is to use this proven model to answer some new questions: What are the differences between sparkling wine and still wine with respect to the variables of the gravity model and what are the explanations for these differences. In our paper, we quantify answers to these questions by developing augmented gravity model that includes a set of standard gravity model variables, such as gross domestic products of trading partners and bilateral distance, contiguity, as well as additional variables such as regional trade agreements (RTA), cultural "proximity" represented with a dummy for common/similar language, and historical relations represented with colonial ties. Using the Poisson Pseudo-Maximum Likelihood Estimator, we estimate different versions of gravity models for both exports and imports. The results show that RTA, historical ties and cultural proximity have different effects on trade in sparkling wine compared to trade in still wine. In the paper, we explain the reasons for these differences.*

**Keywords:** gravity model, sparkling wine, still wine, wine trade, wine imports, wine exports

### 1. INTRODUCTION

International wine production and trade have faced many changes over the last two decades, leading to a significant increase in wine production and international wine trade flows, as well as a transformation of the wine trade. The idea to conduct this research arose from the need to understand the influence of culture, trade agreements, relationships between countries and language on the wine trade. The paper focuses on wine imports and wine exports of sparkling and still wines at the world level over the period 1996-2019. With the emergence of New World countries on the wine scene and the increase in international wine trade, it became much more difficult for wine producing countries to gain a competitive advantage. European wine producers, traditionally the largest wine producers in the world, faced competition, especially from Australia, Argentina, South Africa and Chile. Larger average plantation sizes of wine producers from New World countries lead to lower production costs (Katunar et al., 2020), which leads European wine producers to remain competitive in the international market by introducing new technologies in the production processes, developing the distribution process and targeting the new markets. In addition to this juxtaposition of New World vs. Old World Wine, there is a large gap in the literature regarding trade in different types of wine, i.e. there is an unanswered question: what drives the international trade of sparkling wine and still wine?

Are the determinants the same or are there some differences that need to be addressed and explained? The goal of this paper is to use this proven model to answer some new questions: What are the differences between sparkling and still wine with respect to the variables of the gravity model and what are the explanations for these differences, if any. We assumed that there would be significant differences due to the high concentration of production and international trade of sparkling wine compared to the production and international trade of still wine. In our empirical analysis, we use the trade gravity model because it has been proven many times to be the best possible empirical tool in analysing and explaining international trade patterns, and since we are studying something new, we wanted to have a stable foothold for our analysis. The gravity equation for the analysis of international trade was introduced by Tinbergen in 1962 and has since become a standard tool in the analysis of bilateral trade flows due to its excellent explanatory power (Lombardi, et al., 2016, Castillo, et al., 2016, Gouveia, et al., 2017). The gravity trade model is generally used for ex-post estimation of the impact of different trade policies and trade distortions on bilateral trade. An extended version of the model, the augmented gravity model, emerged with the primary objective of capturing the impact of an increasingly wide range of trade policy options. The empirical investigation was conducted using data for global wine trade in sparkling and still wine collected from secondary sources for the period from 1996 to 2019. After presenting the basic descriptive statistics and based on the gravity model theory, we estimate the gravity model for both exports and imports using Poisson Pseudo-Maximum Likelihood Estimator. At the end of the paper, we explain the possible reasons for the observed differences between sparkling and still wine trade in terms of the gravity model variables. The rest of the paper is organized as follows. Section two presents a literature review on international wine trade. The methodology and data used are explained in section three. The fourth section of the paper presents the main results of the empirical analysis and discussion. The final section of the paper provides a conclusion and recommendations for future research.

## **2. LITERATURE REVIEW**

Due to the large number of wine producers, sellers, and buyers, Rebelo et al. (2018) define the wine industry as a great example of monopolistic competition, where there are free exits and entries into the industry in the long run, making it a dynamic market. Therefore, the globalisation and liberalisation of the wine trade and the impact of the removal of barriers through the free trade agreements is an interesting topic for researchers as these events simply add more dynamics to the mix (Rickard, et al., 2018, Anderson, Wittwer, 2018). The reduction of barriers in the global market has contributed to the increase in international wine trade flows. However, the drivers of competitiveness at the micro level are changing, especially with new competition from New World wine regions. According to research by Bargain et al. (2018), comparative advantage in the wine industry is not static or uniform. Comparative advantages that traditional wine producing countries had were no longer enough to maintain their leading position. The breaking down of barriers has brought new wine producing countries into the global wine scene. In their paper, Bargain et al. (2018) conclude that China, New Zealand, and Chile have the greatest potential to make their mark on the global wine scene due to their competitive advantages, which differ from those of traditional European wine-producing countries. High wage and land costs are cited as potential barriers for European wine producers to continue dominating the world wine scene. According to the latest research by Carbone et al. (2021), in which the authors focus on target markets, the products of the old wine world are considered more sophisticated, especially those from Italy and France. This may still be a competitive advantage of Old World countries, but the question is until when. Cardebat and Figuet (2019) analysed French wine exports and concluded that they became less competitive in the 2000s due to foreign competitors (competitors from New World countries) with lower



prices and due to the appreciation of the Euro against the USD and GBP. According to the research of Galati et al. (2017), specialisation of wine producing countries leads to wine destination recognition and competitive advantages. This paper deals with the international wine trade in the period from 1996 to 2019. In the considered period, wine imports increased by 120%, from 48.4 million hectoliters to 106.5 million hectoliters, while wine exports increased by 94%, from 54.5 million hectoliters to 105.8 million hectoliters (www.oiv.int). During the same period, the average value of imports between country pairs remained the same, about \$3.8 million, while the number of country pairs between which wine is imported increased from 2,828 to 8,024 country pairs. The average value of exports increased by 37.2% from \$2.34 million to \$3.21 million, and the number of country pairs between which wine exports take place increased from 4,672 to 10,361 (UN Comtrade, 2021). Given the above figures, we can see a rapid increase in international wine trade flows. As mentioned above, the world wine market has undergone many changes in the last two decades. Production, consumption and trade of sparkling wine and still wine experienced a boom. In this research, sparkling wine is defined based on the classification Harmonised System and explained in detail in section three of the paper. One of the main reasons for the rapid growth of wine production and trade is changes in consumer preferences. According to the International Organisation of Vine and Wine (OIV) report on the global sparkling wine market (2020), global sparkling wine production increased by 57% from 2002 to 2018, growing from 5% of global wine production before the 2008 crisis to 8% of global wine production in 2017. The distinctive feature of sparkling wines is that their production and export market is highly concentrated (almost half of the 2018 production came from Italy and France, while France had 51.4% of the market share in sparkling wine exports) (Thome, Paiva, 2020). In 2019, the world trade of sparkling wine recorded a value of \$7.1 billion. The gravity model became one of the most used models in the analysis of international trade, and it is also used in the analysis of wine trade (Lombardi, et al., 2016, Castillo, et al., 2016, Gouveia, et al., 2018, Martinho, 2019). In their work, Lombardi et al. (2016) used an extended version of the gravity model to analyse trade in the intra-EU market, focusing on France, Italy and Spain, and concluded that there is a difference between bulk and bottled wine in terms of competitiveness, the impact of prices, transport costs and distance on export volumes. In the same year, another research was conducted by Castillo et al (2016). They analysed the international wine trade of bulk and bottled wines and concluded that higher income, lower prices, cultural and geographical affinities, and trade agreements promote wine exports. Researchers Balogh and Jambor (2018) examined the role of culture, language, and trade agreements in global wine trade. According to their research, larger countries export more wine, transportation costs increase with geographic distance, and global wine export costs are lower when trading partners are culturally similar.

### 3. METHODOLOGY & DATA

In our analysis we use standard panel data estimator that is used in the gravity model, that is Poisson Pseudo Maximum Likelihood (PPML) estimator. By using panel data, we have possibility to control for heterogeneity between trading pairs, and we do that by including importer and exporter dummies. The gravity equation in multiplicative form for panel data is generally formulated as follows:

$$T_{ijt} = O_{it}D_{jt}\Omega_{ijt} \quad , \quad [1]$$

where  $T_{ijt}$  is the monetary value of exports/imports from/of country “i” to/from country “j” in time “t”.  $O_{it}$  includes origin country factors (usually gross domestic product), effectively representing the supply of exports (in general equilibrium context of the gravity model), whereas  $D_{jt}$  importer-specific factors (again, gross domestic product), effectively presenting the

demand for imports of the destination market “j” in time “t”. The last term,  $\Omega_{ijt}$ , denotes the variables that origin and destination countries have in common. Equation [1] could be considered as a naive form of gravity equation. The more recent approach is to include fixed effects for exporter and importer, which are, in case of panel data, time varying, e.g. exporter-year and importer-year specific effects, in order to account for multilateral resistance terms (MRT). By including MRT in the model, we control for the effects of third countries on the bilateral trade between county  $i$  and  $j$ . We developed the following econometric model, that is based on Equation 1, and which is in additive form, obtained with logarithmic transformation of the original model:

$$trade_{ijt} = \beta_0 + \beta_1 lgdp_{oit} + \beta_2 lgdp_{dit} + \beta_3 ldist_{ijt} + \beta_4 colony_{ij} + \beta_5 lang_{ij} + \beta_6 rta_{ijt} + \beta_7 contiguity_{ij} + \lambda_t + u_{ijt} \quad [2]$$

In Equation 2 *trade* represents trade flows from country  $i$  to county  $j$  in time  $t$ . We estimate the Equation 2 for exports and imports separately. When using PPML, we practically estimate linear-log model so the trade flows are in original values (expressed in USD dollars) due to the specific function form (Poisson likelihood function), while all other continuous variable are in logs. So, *lgdp* and *lgdpd* stand for log of the GDP at market prices for origin and destination country, respectively. Variable *ldist* stands for the log of the distance between trading partners. We use dummy variable *colony*, with the value 1 if the trading pair was ever in colonial or dependency relationship, 0 otherwise. Dummy variable *lang* is a dummy variable with value 1 if the trading pair have common official or primary language, 0 otherwise. Dummy variable *rta* is a dummy variable with value 1 in the trading pair have signed reciprocal trade agreement, 0 otherwise, while *contiguity* is a dummy variable with the value 1 if the trading pair shares the land border, 0 otherwise.  $\lambda_t$  stands for time fixed effects, while  $u_{ijt}$  represents error term. When using PPML estimator we also control for country fixed effects by adding exporter and importer dummies. The bilateral trade data (exports and imports) that we use in our analysis comes from UN Comtrade and spans from 1996 to 2019. We use Harmonised System classification and define three product groups: (1) sparkling wine (HS code 220410), (2) Still wine in containers holding 2 liters or less (HS code 220421) and (3) Still wine in containers holding 2 liters or more (HS code 220429). The rest of the variables in our analysis come from Centre d'Études Prospectives et d'Informations Internationales (CEPII) database on gravity variables. Table 1 contains descriptive statistics of our dataset. We emphasise that we calculated statistics only for wine (both sparkling and still) for which unit price does not surpass 25 dollars, since the unit prices greater than 25 where unreelable. This meant that our dataset contains 95% of the data that was originally obtained from UN Comtrade. In Table 1 *trade* represents average value of trade flows between trading partners, while we also show separate statistics for exports and imports (number of observations for exports and imports don't sum to number of observation for total trade because same observations in total trade are re-export and re-import trade flows. We can also observe that 6.7% of the observed dyads (trading pairs) are dyads where one country is former colony and other is former colonizer. Also, 45% of trading pairs have some reciprocal trade agreement and 20.6% share similar language. According to UN Comtrade data in the period 1996-2019 imports of sparkling wine has tripled, from \$1.8 billion in 1996 to \$5.2 billion in 2019. The number of pairs of countries in which imports take place also tripled, while average value of imports of sparkling wine remains the same. With exports the situation is slightly different. Exports of sparkling wine obviously also tripled, from \$1.9 billion in 1996 to \$6 billion in 2019, but the number of trading doubled which means that average value of exports of sparkling wine increased for more than 30%. Imports of still wine (up to 2 liters) tripled, from \$7.2 billion in 1996 to \$20.7 billion in 2019, and number of pairs of countries also tripled, while exports increased from \$7.2 billion in 1996 to \$23.0 billion in 2019, while number of

pairs of countries doubled. Average values of imports remain the same in the observed period, while the average value of exports increased for 50%. Imports of still wine (over 2 liters) more than doubled, from \$1.4 billion in 1996 to \$3.3 billion in 2019, while exports increased from \$1.3 billion in 1996 to \$3.5 billion in 2019. Average values of imports slightly decreased in the observed period, while the average value of exports increased for 25%. These statistics for still wine just shows that the consumer base is growing across countries.

*Table 1: Descriptive statistics*

	N	Mean	St.Dev	Median	min	max
trade	374149	2960000	2.91e+07	25141	1	1.58e+09
exports	190423	2850000	2.77e+07	28176	1	1.29e+09
imports	173081	3220000	3.13e+07	23503	1	1.58e+09
sparkling unitprice	84871	6.548	5.493	4.665	.001	24.996
still unitprice	146740	5.02	4.183	3.76	.001	25
traded volume	374149	1160000	1.38e+07	8312	1	3.33e+09
gdp o	370686	1.18e+09	2.81e+09	2.64e+08	12701.09	2.14e+10
gdp d	364093	1.29e+09	2.96e+09	2.64e+08	12701.09	2.14e+10
dist	372166	5556.095	4610.15	4495.316	2.738	19747.4
colony	373785	.067	.249	0	0	1
language	372166	.206	.405	0	0	1
rta	374131	.452	.498	0	0	1
contiguity	366138	.085	.279	0	0	1

*(Source: author's calculation)*

#### 4. RESULTS & DISCUSSION

Table 3 contains the results of our main model. We can see that all the main gravity variables have the expected signs and are significant. That is, in the case of exports, the GDP of the destination country drives trade, while in the case of imports, the GDP of the country of origin (in this case, the country of origin is the country that imports wine) drives trade. In all cases, i.e. for sparkling wine, still wine in containers of 2 liters or less (still wine, 2L) and still wine in containers of more than 2 liters (still wine, 2L+), we can see the negative impact of transport costs, represented by the distance between trading partners, on both exports and imports. What is striking about our results is that the colonial linkages are only significant for exports of sparkling wine, which is generally more expensive. We find that the reason for this is that the production and hence exports of sparkling wine are highly concentrated, with the top 5 producing countries accounting for 80% of the world's sparkling wine production (OIV, 2020) and some large producing countries exporting predominantly to former colonies, such as France, which exports more than 65% of total world colonial exports of sparkling wine. Also, the share of France's exports to former colonies in total world exports of sparkling wine is a remarkable 7%. Moreover, the size of the estimated coefficient is 50% smaller than the coefficient obtained in the study by Xiong et al. (2013), which is as expected since we estimate the model for trade between all trade pairs in the world, while they focus on French exports (and only those of Champagne) and use firm-level data. Language seems to significantly (and positively) affect only still wine trade. This would suggest that if we assume that the effect of similar language on trade is similar to the effect of similar culture, as argued by Fidrmuc & Fidrmuc (2016), trade in still wine is strongly influenced by it, as opposed to trade in sparkling wine. Reciprocal trade agreements seem to facilitate only imports, that is, RTAs are significant drivers for still wine imports, while they are not significant for exporters of both sparkling and still wine at the 5% significance level. We can say that the RTA impact results are inconclusive, but this is consistent with previous research findings such as those of Castillo et al. (2016).

Table 2: Results of estimation of Equation 2 using PPML

	(1)	(2)	(3)	(4)	(5)	(6)
	exports	exports	exports	imports	imports	imports
VARIABLES	Sparkling wine	Still wine, 2L	Still wine, 2L+	Sparkling wine	Still wine, 2L	Still wine, 2L+
lgdpo	-0.781** (0.365)	-0.135 (0.222)	0.891*** (0.244)	1.124*** (0.165)	1.318*** (0.176)	0.301** (0.139)
lgdpd	0.873*** (0.176)	1.156*** (0.128)	0.307** (0.151)	-1.241*** (0.351)	-0.350 (0.236)	0.399* (0.219)
ldist	-0.814*** (0.120)	-0.545*** (0.112)	-0.885*** (0.144)	-0.434*** (0.143)	-0.294*** (0.105)	-0.559*** (0.136)
colony	0.476** (0.237)	0.268 (0.243)	0.119 (0.275)	0.334 (0.259)	0.209 (0.256)	0.0529 (0.285)
lang	0.259 (0.252)	0.864*** (0.160)	1.432*** (0.241)	0.411 (0.263)	0.924*** (0.163)	1.474*** (0.248)
rta	0.306* (0.177)	0.171 (0.142)	0.0530 (0.197)	0.432* (0.251)	0.348** (0.170)	0.349* (0.189)
contiguity	0.189 (0.254)	0.110 (0.243)	0.423* (0.222)	0.121 (0.259)	0.0724 (0.224)	0.624*** (0.236)
Constant	21.80** (9.402)	0.638 (5.112)	-2.010 (5.849)	23.38*** (8.858)	-0.415 (5.774)	5.721 (5.278)
Time FE	YES	YES	YES	YES	YES	YES
Exporter FE	YES	YES	YES	YES	YES	YES
Importer FE	YES	YES	YES	YES	YES	YES
Observations	41,267	68,363	31,864	36,098	64,309	33,540
Pseudo R-squared	0.929	0.906	0.796	0.935	0.911	0.810

Robust standard errors in parentheses

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ 

(Source: author's calculation)

## 5. CONCLUSION

Our research focused on investigating the possible existence of differential effects of some important trade-shaping variables such as common language/culture, common historical relations and trade agreements on trade in different types of wine, namely sparkling wine and still wine. We used a well-established gravity model to test our assumptions. Our results show that similar culture, proxied by a common or similar language, is the driving force for international trade, both exports and imports, of still wine, but not sparkling wine. We argue that the reason could be that still wine is on average cheaper than sparkling wine and therefore has a larger consumer base. In addition, still wine is more embedded in culture and its consumption is not as associated with festivities as is the case with sparkling wine. On the other hand, common historical ties might drive exports of sparkling wine, as its consumption is considered more prestigious, i.e., it is a luxury product. Moreover, as we previously mentioned sparkling wine production and trade is highly concentrated, with the France being dominant producer, so their sparkling wine is exported all over the world, regardless of language. Since we obtained our results using aggregate trade data, future research should focus on primary analyses at the firm level to broaden the research scope and provide more subtle answers to the question of what drives the demand for sparkling wine compared to still wine.

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## LITERATURE:

1. Anderson, K., Wittwer, G. (2018). Cumulative effects of Brexit and other UK and EU-27 bilateral free-trade agreements on the world's wine market. *The World Economy*, 41, pp. 2883-2894.
2. Balogh, J. M., Jambor, A. (2018). The Role of Culture, Language and Trade Agreements in Global Wine Trade. *Agris On-line Papers in Economics and Informatics*, 10(3), pp. 17-29.
3. Bargain, O., Cardebat, J., Chiappini, R., Laffitte, C (2018). Long-Term Prospects of the International Wine Trade. *Journal of Wine Economics*, pp. 1-9.
4. Carbone, A., Demaria, F., Henke, R. (2021). The Sophistication of International Wine Trade: A New Import Measure. *Italian Economic Journal*.
5. Cardebat, J. M., Figuet, J. M. (2019). The impact of exchange rates on French wine exports. *Journal of Wine Economics*, 14(1), pp. 71–89.
6. Castillo, J. S., Villanueva, E. C., Garcia-Cortijo, M. C. (2016). The International Wine Trade and Its New Export Dynamics (1988-2012): A Gravity Model Approach, *Agribusiness*, 32(4), pp. 1-16.
7. Fidrmuc, J., Fidrmuc, J. (2016). Foreign languages and trade: evidence from a natural experiment. *Empirical Economics*, pp. 31–49.
8. Galati, A., Crescimanno, M. (2017). Changes in the international wine market competitiveness. *International Journal of Globalization and Small Business*, 9(4), pp. 277-293.
9. Gouveia, S., Rebelo, J., Lourenzo-Gomes, L. (2018). Port wine exports: a gravity model approach. *International Journal of Wine Business Research*, 30(2), pp. 218-242.
10. International organization of vine and wine, *OIV focus the global sparkling wine market* (2020), Location: [www.oiv.int](http://www.oiv.int).
11. Katunar, J., Vretenar, N. & Kaštelan Mrak, M. (2020.). Competitiveness of the Wine Sector in EU Countries. *Interdisciplinary Management Research XVI – Conference Proceedings*, Josip Juraj Strossmayer University of Osijek, Faculty of Economics in Osijek, Croatia, pp. 1619-1634.
12. Lombardi, P., Bianco, A., Freda, R. (2016). Development and trade competitiveness of the European wine sector: A gravity analysis of intra-EU flows. *Wine Economics and Policy*, 5(1), pp. 50-59.
13. Martinho, Vítor João Pereira Domingues (2019). The place of wine in societies: the cultural perspective, ZBW – Leibniz Information Centre for Economics, Kiel, Hamburg, Working paper.
14. Rickard, B. J., Gergaud, O., Ho, S., Livat, F. (2018). Trade liberalization in the presence of domestic regulations: public policies applied to EU and U.S. wine markets. *Applied Economics*, 50(18), pp. 2028-2047.
15. Thome, K., M., Paiva, V. A. L. (2020). Sparkling Wine International Market Structure and Competitiveness. *Wine Economics and Policy*, 9(2), pp. 37-47.
16. Xiong, B., Beghin, J. C., Marette, S. (2013). Gains to French champagne makers from tariff liberalization, August 4-6, 2013, Washington, D.C. 150003, *Agricultural and Applied Economics Association*, 2013 Annual Meeting.

# THE IMPACT OF THE COVID 19 PANDEMIC ON THE BUSINESS OF THE EBAY PLATFORM

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## ABSTRACT

*The aim of this paper is to analyse the business results of the eBay platform at the time of the global Covid 19 pandemic. The economic crisis, globally, has hit all industrial sectors. At the same time, lockdown has contributed to greater online shopping and online platforms. The eBay platform is the largest global auction platform and the oldest of the existing online platforms. The analysis of the business result of the platform, as well as the trend of the number of customers, will determine the impact of the pandemic on the business result of the platform as well as the relationship between sales revenue on the platform and the trend of the number of users. The research covers the financial results for the last few years as well as the trend of the number of users before and during the pandemic. The results of the research will be the basis for comparison with the results of the business results survey of other online platforms in order to more easily draw conclusions about the impact of the pandemic on online businesses.*

**Keywords:** Covid 19, online auction, platform economy, zero marginal cost

## 1. INTRODUCTION

The basic idea of launching an Internet commerce platform originated in the time of Web 1.0. In 1995, an auction platform based on the idea of the founder Pierre Omydiar was launched. The first name of the platform was AuctionWeb, but the name changed to eBay very quickly. After only ten years of business, the platform is listed on the NYSE. During the 1990s, it was the leading online marketplace, which was captivating in the world of Web 1.0 (Simon 2011). The platform was one of the pioneers of selling goods in the online model. The model will remain known as the "dot.com burst", and eBay will be one of the few platforms that has survived. The Pet.com platform has become synonymous with the model of selling goods on the Internet and the disappearance of that model. Pet.com procured goods from the manufacturer and sold them online. The eBay platform created direct interactions between sellers and buyers on the platform. The difference between eBay and Pet.com is based in value chain control. While Pet.com and similar online services controlled the goods in the warehouse, sales and distribution or value chain, eBay created direct interactions between users on the platform (Parker et.al. 2016). Platforms that controlled the value chain, i.e. stored goods for distance selling, failed in the "dot.com burst" model, and left their place to platforms that allow interaction between users on the platform. The model that emerged, and was based on building interactions between users on the platform, became known as the platform economy (Parker et.al. 2016; Moazed, Johnson 2016; Reillier, Reillier 2017; Lozić 2017; Lozić 2019a). Enabling interaction between sellers and buyers, or creating a network effect, is nothing more than combining supply and demand. The same principle is now used by Android and iOS (Moazed, Johnson 2016). Since the launch of the project, eBay has been structured as a platform that uses the "zero marginal cost" model (Rifkin 2015; Lozić 2019b), and according to management strategies uses the "bowling alley model" (Parker et.al. 2016). Doing business in the platform economy model, ie using the zero marginal cost effect, enables the platform to control operating cost. The analysis of financial items will investigate gross profit as a direct result of operating cost control. Although eBay generates significantly less revenue than competing platforms Amazon and Alibaba, it has managed to develop a stable and reliable user community and will

explore the trend in the number of users during the Covid 19 pandemic. they buy products from a niche and are long-term tied to the platform which is a special competitive advantage of eBay over other competitors.

## **2. LITERATURE REWUIV**

The development of Web 2.0 and data processing in the "big-data" model has enabled the rapid growth of the platform. Web 2.0 is defined as a set of applications and technologies that enable the posting and sharing of user-generated content, such as social media posts, blogs, video and photo sharing sites, etc. (Laudon, Traver 2016). It differs from the previous phase by a drastic increase in information density, interactivity and levels of adaptation. It is also important to draw attention to the shift from online shopping creation to online shopping habit (Hemp 2006). The platform has developed its own application as well as its own data processing model to make it easier to match users. It has very quickly positioned itself as the leading online platform (Silva et.al. 2018). The eBay platform started its business as an online auction service, but over time has expanded its business to all forms of digital commerce (Hu et.al. 2021). At the turn of the century, eBay introduced the "Buy it now" option (BIN), which aroused great user interest. The option was based on the price of the goods sold at auction and a fixed price, if the goods are not sold at auction (Bauner 2015). Further development of the model brought a combination of negotiation-based factors, with the final price of the contracted item. Research has shown a strong correlation between final price and user characteristics, and patience has been shown to be one of the most significant characteristics (Backus et.al. 2020). The Internet environment and virtual communities are becoming vital elements in a phenomenon often referred to as "social commerce" (Huang, Benyoucef 2013). Therefore, the recommendations of other consumers, instead of the advice of friends / family, are also becoming an increasingly important decision-making factor (Kotler, Keller 2012). The platform is an example of a corporation that has evolved into an online retailer model and become the largest global service for auctions and similar sales model in digital form (Einav 2014). Americans have an average of 36 unwonted items in their homes, worth \$ 3,675, that they could turn into cash, according to a new report by online marketplace eBay. And during the pandemic a lot of people did just that (Verdon 2021). Analysing from a consumer perspective, the fundamental determinants of online consumer behaviour are related to consumer characteristics, environmental impacts, product / service characteristics, media characteristics, and retailer characteristics (Cheung 2005). Research has shown that new vendors can improve business performance in laboratory conditions using multivariate regression analysis, but real-time and cyberspace sales differ greatly from laboratory conditions. Therefore, it is very important to learn from existing vendors and use customer segmentation studies in correlation with bidding strategies (Li et.al. 2017). Online auction success factors can be divided into three categories: trust increase factors, transaction increase factors, and product attributes. Factors of increasing trust are directly related to increasing customer confidence in the process of interaction with the seller and to reducing customer exposure to information asymmetry (Houser, Wooders 2006). Data on product characteristics, as well as customer characteristics and preferences are scattered on different data carriers, which requires the development of a special algorithm for data collection and processing. Improving the development of customer-seller interactions is a direct consequence of the development of a special algorithm for collecting, processing and interpreting results, as well as for the development of machine learning that shortens process time (Amado et.al. 2018). Application development and data processing requires continuous improvement of the algorithm, but also increasing the capacity of the data carrier (Canito et.al. 2018). There are currently a billion entries on eBay auction listings. Every week, through mobile apps, 10 million new items are added to the sales lists. In America, a pair of women's shoes and dresses are bought every 6 seconds, and women's handbags every 10 seconds.

In the UK, necklaces are bought every 10 seconds, and in Germany, women's fashion accessories are bought every 14 seconds (Allison 2018). The development of the Internet has made online auctions not only one of the most important channels for C2C transactions but also an extensive research area (Chen et.al.2018). The online sales industry is already in a mature phase and saturation within the industry is getting stronger. Already in the time before the "dot.com burst" studies have shown a very high rate of saturation and rivalry between industry entities (Cohen 2002). The research focuses on the analysis of financial results, as well as the trend in the number of users before the Covid 19 pandemic. On the one hand, the crisis has significantly limited overall economic activity, and on the other hand, living conditions have given impetus to the development of online shopping.

### **3. MEHTODOLOGY AND RESERARCH QUESTION**

For the purposes of the research, data from the eBay Annual Report will be used, ie from the form "Form 10-K" which the administration compiles for the needs of the NYSE. In addition, data from other specialized sources that cover this topic will be used. The research is aimed at answering two fundamental research questions:

- 1) Q1 - How much did the Covid 19 crisis affect the financial result of the platform?
- 2) Q2 - How did the Covid 19 crisis affect the trend in the number of platform users?

In the research and analysis of financial results, the methods of financial analysis and statistical analysis of selected items from the income statement will be used. Selected items will be processed by the regression trend method in order to obtain data on changes in individual items by periods, and to calculate average changes in a given period. The trend in the number of users will be analysed by statistical analysis and regression trend methods to determine the direction and strength of the trend in the number of users. Both types of data will be analysed by the same methods so that the results can be compared. The final results and interpretation will be presented in the chapter Discussion and Conclusion.

### **4. DATA ANALYSIS**

Data research and analysis is divided into two basic groups. In the first part, selected items from the financial statements will be analysed, and in the second part, the trend in the number of users. The third part is the synthesis and analysis of the data obtained from the first two parts of the research.

#### **4.1. Financial analysis**

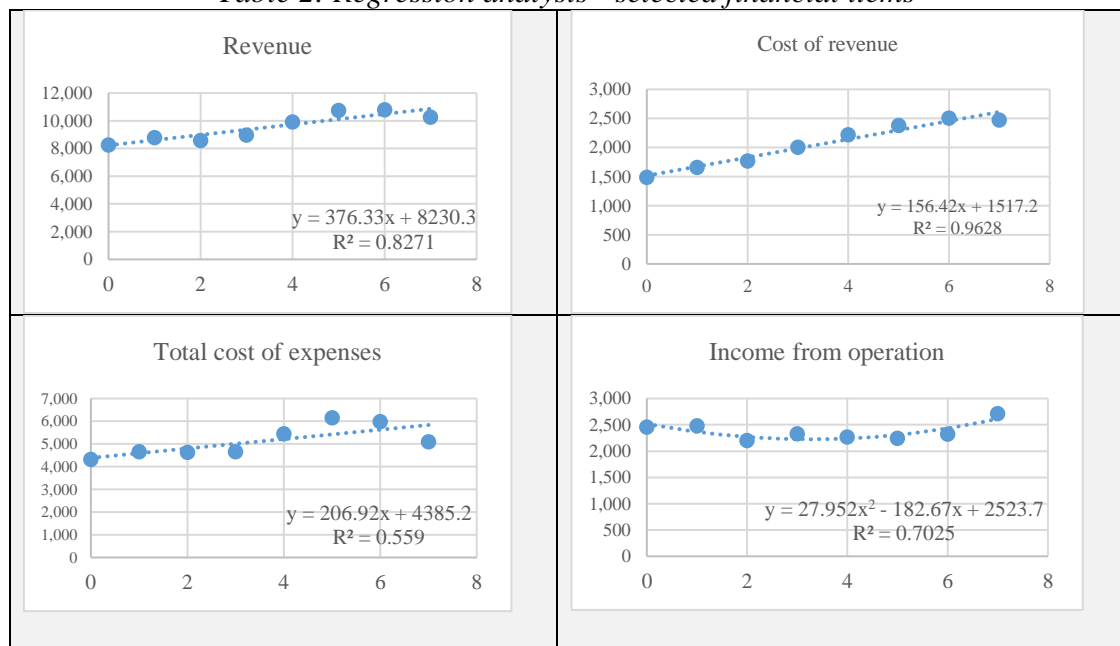
The financial analysis of the platform covers a period of eight years. For the purposes of the research, a smaller period of five years would be sufficient, but the intention is to point out the saturation and oscillation of income that is already significant. In the analysed period, from 2013 to 2020, revenues increased by 24.4%, from \$ 8.25 billion in 2013, to \$ 10.27 billion in 2020. The increase was not continuous and in 2014 and 2015 revenues decreased compared to the previous year. year. The same happened in the last analysed period. From 2018, total revenues have digressive growth and in 2020 they are lower compared to the previous year by 4.9%. Cheng (2020) also points to the decline in revenue, as well as changes within the online retail segment, emphasizing the growth of Walmart's share in online sales, as well as the increase in Amazon's market share in the USA market. In the last two analysed periods, revenues increased by only 0.3%, i.e. decreased by 4.9%, from which it can be concluded that the pandemic had a significant impact on the total revenues of the corporation. The results of the analysis are shown in Table 1.



*Table 1: Selected financial items eBay (millions; \$)*

	2013	2014	2015	2016	2017	2018	2019	2020
<b>Net revenue</b>	8.257	8.790	8.592	8.979	9.927	10.764	10.800	<b>10.271</b>
<b>Cost of revenue</b>	1.492	1.663	1.771	2.007	2.221	2.382	2.508	2.473
<b>Gross profit</b>	6.765	7.127	6.821	6.972	7.706	8.382	8.292	7.798
<b>%</b>	81,9%	81,1%	79,4%	77,6%	77,6%	77,9%	76,8%	<b>75,9%</b>
<b>Total operating expenses</b>	4.311	4.651	4.624	4.647	5.442	6.142	5.971	5.087
<b>Income from operation</b>	2.454	2.476	2.197	2.325	2.264	2.240	2.321	2.711
<b>Net income (loss)</b>	2.856	46	1.725	7.266	-1.017	2.548	1.786	5.667
<b>Net revenue (n/n.1)%</b>	-	6,5%	-2,3%	4,5%	10,6%	8,4%	0,3%	<b>-4,9%</b>

*Source: Own illustration (eBay Annual report)*

*Table 2: Regression analysis - selected financial items*

*Source: Own illustration (eBay Annual report)*

In relation to revenue growth of 24.4%, in the analysed period the cost of revenue had a significant growth of 65.8%, which is 2.7 times more than the increase in revenue. While revenue has fallen by 4.9% in the last period, cost of revenue has fallen by 1.4%. The result of such trends is a 6% drop in gross profit. The decline in gross profit in the last analysed period is also related to the smallest share of gross profit in revenues in the entire analysed period. The average share of gross profit, in the analysed period, was 78.5%. In the last analysed period, the share of gross profit was 75.9%. The regression analysis included selected items from the corporation's financial report. The average annual revenue growth was 3.94% ( $s = 3.94$ ) with a determination coefficient of 0.8271. On the regression line ( $y = 376.33x + 8230.3$ ) the inflection point, in the last analysed period, is below the regression line. Revenues are declining and the coefficient of determination is on the verge of interpretation accuracy ( $R^2 > 0.8$ ). Cost of revenue grows on average annually at a rate of 7.58% ( $s = 7.58$ ), with a coefficient of determination of 0.9628. On the regression line, the inflection point of the last period is below the regression line ( $y = 376.33x + 8230.3$ ), but the growth of costs is continuous with the coefficient of determination proving a strong connection. Total costs of expenses are continuously growing, but they oscillate around the regression direction ( $y = 206.92x + 4385.2$ ), and the coefficient of determination of 0.559 is insufficient for an accurate estimate of the growth rate.

The curve of the direction of the regression trend income from operation ( $y = 27,952x^2 - 182,67x + 2523,7$ ), indicates the oscillation of the financial result and saturation in the industry. The coefficient of determination is not sufficient for a precise interpretation of the regression trend. The results of the analyses are shown in Table 2.

#### 4.2. User trend analysis

The research of the trend of the number of users by the method of descriptive analysis covers a period of ten years. The analysed data were sorted quarterly and covered a period of 44 quarters. The average size of the statistical set is 145.37 million users; Median 157.5 million; Mod 162 million. Skewness is -0.63, i.e. slightly negatively asymmetric, which reveals that the growth in the number of users is slow, i.e. that the growth is digressive. The results of the research are shown in Table 3.

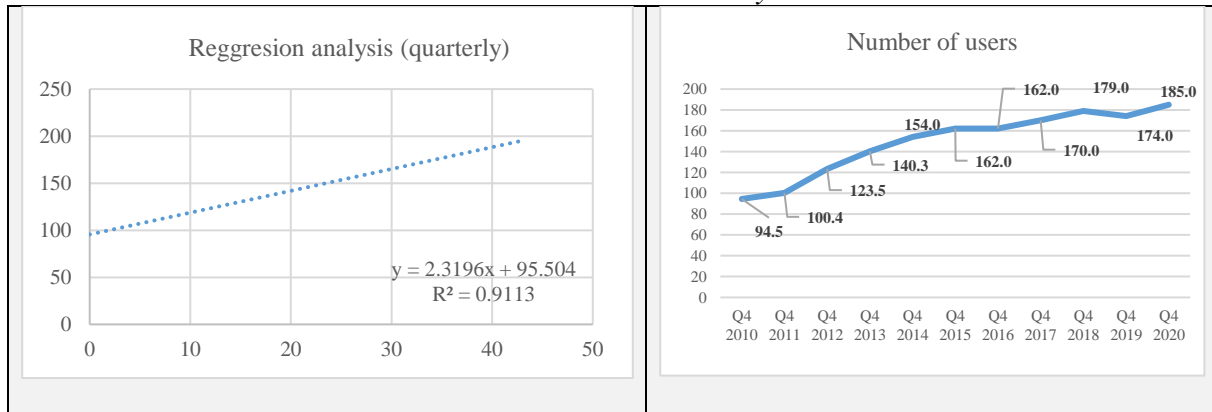
Table 3: User's trend description analysis

Mean	145,375	<b>Number of users (million)</b>		
Standard Error	4,70535	<b>Q4 2010</b>	94,5	-
Median	157,5	<b>Q4 2011</b>	100,4	6,2%
Mode	162	<b>Q4 2012</b>	123,5	23,0%
Standard Deviation	31,21176	<b>Q4 2013</b>	140,3	13,6%
Sample Variance	974,174	<b>Q4 2014</b>	154,0	9,8%
Kurtosis	-1,11193	<b>Q4 2015</b>	162,0	5,2%
Skewness	-0,6336	<b>Q4 2016</b>	162,0	0,0%
Range	95,5	<b>Q4 2017</b>	170,0	4,9%
Minimum	89,5	<b>Q4 2018</b>	179,0	5,3%
Maximum	185	<b>Q4 2019</b>	174,0	-2,8%
Sum	6396,5	<b>Q4 2020</b>	185,0	6,3%
Count	44			

Source: Own illustration

Statistical analysis using the index method takes the number of users at the end of the year as frequencies in the analysis, ie it uses the number of users at the end of the fourth quarter, at the end of the year. The largest annual increase in the number of users was realized in 2012, ie the number of users in the fourth quarter of 2012 was 23% higher than in the last quarter of the previous year. After that, the number of users grows digressively until 2016, and then oscillates. The gross profit trend is very similar to the trend of the number of users on the platform. The trend in the number of users indicates the strong impact of the pandemic, but also signs of saturation as well as income. The results of the analysis are shown in Table 3. The average quarterly growth of the number of users was 1.6% ( $s = 1.6$ ), explained by the linear regression of the trend ( $y = 2.3196x + 95.504$ ) with the coefficient of determination  $R^2 = 0.9113$ .

Table following on the next page

*Table 4: User's trend analysis**Source: Own illustration*

The results of the annual trend in the number of users are shown in Table 4. The total number of users increased from 94.5 million in 2010, to 185 million users in 2020. That is an increase of 95.8%. In the context of trend research during the Covid 19 pandemic, the number of users fell by 2.8% in 2019, and increased by 6.3% the following year, which was insufficient to maintain positive revenue growth. The average annual growth in the number of users was 5.96% ( $s = 5.96$ ), explained by the linear regression trend equation ( $y = 8.9164x + 104.94$ ), with the coefficient of determination  $R^2 = 0.9034$ . The points of infection of the regression linear trend, in the last two analysed periods, are below the trend line, which indicates a slowdown in the growth of the number of users. The pandemic also had a significant impact on the trend in the number of users. In the context of attracting and retaining customers, eBay will focus on attracting Gen Z who should become their key customers (Cheng 2020).

#### 4.3. Table ANOVA analysis

In the context of researching the strength of the relationship between the trend of income and the trend of the number of users in the analysed period, the ANOVA analysis model was used. Revenues and the number of users for the period of eight years, i.e. from 2013 to 2020, were entered into the ANOVA regression model. The result of the research showed a very strong connection between the trend of income and the trend of the number of users, i.e. the correlation between the two groups of frequencies is higher than 0.8 (Multiple  $R = 0.8771$ ). at the level of significance of 0.95, which confirms the strong dependence of the revenue trend in relation to the trend of the number of users. Adjusted R Square of 0.7305, or the coefficient of determination for a small number of frequencies (in this example is 8), is 0.7309 Insufficient for precise interpretation of the obtained results Insufficient coefficient of determination is directly related to the oscillations of the trend in the number of users and the decline in revenue in the last analysed period.

*Table following on the next page*

Table 5: Table ANOVA

<i>Regression Statistics</i>					
Multiple R	0,877147				
R Square	0,769386				
Adjusted R Square	<b>0,73095</b>				
Standard Error	525,746				
Observations	8				
<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	5533017	5533017	20,01751	<b>0,0042189</b>
Residual	6	1658453	276408,9		
Total	7	7191470			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>
Intercept	-707,35	2299,576	-0,3076	0,768784	-6334,2091
Users	61,85538	13,82523	4,474093	<b>0,004219</b>	28,026254

Source: Own illustration

## 5. DISSCUSION AND CONCLUSION

The analysis of the platform's business results in the last eight years indicates the first signs of industry saturation, and the very significant impact of the crisis caused by the pandemic. We will reduce the results of the research to several key conclusions:

- The Covid 19 crisis significantly affected the trend of the corporation's total revenues.
- Cost of revenue increased 2.7 times more than revenue.
- The average share of gross profit has been falling in the last three years, and is the lowest in the last analysed period.
- Revenues fluctuate significantly and grow very slowly on average, indicating signs of saturation within the industry.
- The trend in the number of users is oscillating and is strongly influenced by the Covid 19 pandemic.
- Total revenues directly depend on the trend in the number of users and show a strong link.

In the context of the first research question, the research results showed a very strong impact of the Covid 19 pandemic on the financial performance of the platform. The amount of revenue fluctuated even before the pandemic, but in 2020 the largest decline in revenue was recorded in the analysed period. In addition, the average gross profit is continuously declining, and 2020 was the lowest in the analysed period. In the context of the second research question, the results of the analysis show a large correlation between the pandemic and the trend in the number of users. In the analysed period, the trend number of users increased digressively, and in the last analysed period it increased by 6.3%. The trend of the number oscillates and, in that part, overlaps with the financial result. The growth in the number of users in the last analysed period is directly related to the impact of the Covid 19 pandemic, based on which the strong impact of the pandemic on the trend in the number of users is confirmed. Future research, after the end of the pandemic, should provide an answer to the question of whether revenue growth will continue and what will be the trend in the number of users.

**LITERATURE:**

1. Allison, P. (2018). „Collecting and Selling Everyday Clothing Narratives on eBay“. *Fashion Theory*, 22:4-5, 531-537, doi: 10.1080/1362704X.2018.1425528.
2. Amado, A.; Cortez, P.; Rita, P.; Moro, S. (2018). „Research trends on big data in marketing: a text mining and topic modelling based literature analysis“.
3. Backus, M.; Blake, T.; Larsen, B.; Tadelis, S. (2020). “Sequential Bargaining in the Field: Evidence from Millions of Online Bargaining Interactions.” *The Quarterly Journal of Economics*, Volume 135, Issue 3, pp. 1319–1361.
4. Bauner, C. (2015). “Mechanism Choice and the Buy-it-now Auction: A Structural Model of Competing Buyers and Sellers.” *International Journal of Industrial Organization* 38: 19–31.
5. Canito, J.; Ramos, P.; Moro, S.; Rita, P. (2018). „Unfolding the relations between companies and technologies under the Big Data umbrella“. *Comput. Ind.* 99, 1–8. doi.org/10.1016/j.jretconser.2018.05.001.
6. Chen, K.P.; Lai, H.P., Yu, Y.T. (2018). „The seller's listing strategy in online auctions: Evidence from eBay“. *International Journal of Industrial Organization*. (56), pp. 107-144. doi.org/10.1016/j.ijindorg.2017.11.003 0167-7187.
7. Cheng, A. (2020). „EBay Has a Chance to Become Relevant Agin Thanks To Coronavirus. Can It Deliver?“ *Forbes*.  
<https://www.forbes.com/sites/andriacheng/2020/07/29/coronavirus-has-given-ebay-a-new-shot-at-being-relevant-again-can-it-deliver/?sh=7b74c63d1402>. [16.04.2021.]
8. Cheung, C.M.; Chan, G.W.; Limayem, M.; (2005). „A critical review of online consumer behavior: empirical research“. *J. Electron. Commer. Organ.* 3 (4), 1–19.
9. Cohen, A. (2002). „Is this any place to run a business?“, *FSB: Fortune Small Business*, Vol. 12, No.9, pp.55–65.
10. Ebay. <https://investors.ebayinc.com/financial-information/annual-reports/default.aspx>. [12.03.2021.]
11. Einav, L.; Levin, J.; Popov, I.; Sundaresan, N. (2014). „Growth, adoption, and use of mobile E-commerce“. *Am. Econ. Rev.* 104 (5), 489–494.
12. Hemp, P. (2006). „Are you ready for e-tailing 2.0“. *Harvard Bus. Rev.* pp. 28.
13. Houser, D.; Wooders, J. (2006). „Reputation in auctions: theory, and evidence from eBay“. *Journal of Economics & Management Strategy*, Vol. 15, No. 2, pp.353–369.
14. Hu, H; Dowd, G.; Bouchard, D. (2021). „When bargaining meets auctions: assessing the effect of best offer on eBay auctions“. *Applied Economics Letters*. doi: 10.1080/13504851.2020.1862746.
15. Huang, Z.; Benyoucef, M. (2013). „From e-commerce to social commerce: a close look at design features“. *Electron. Commer. R. A*, 12 (4), 246–259.
16. Kotler, P.; Keller, K. (2012). *Marketing Management*, 14th edition. Prentice Hall, USA. ISBN 9780132102926.
17. Laudon, K.C.; Traver, C.G. (2016). *E-commerce: Business, Technology, Society*, 12th edition. Pearson. ISBN 9780133507164.
18. Li, J.; Tso, K.F.; Liu, F. (2017). „Profit earning and monetary loss bidding in online entertainment shopping: the impacts of bidding patterns and characteristics“. *Electronic Markets*, Vol. 27, No. 1, pp.77–90.
19. Lozić, J. (2019a). *Menadžment ekonomije platformi*. Sveučilište Sjever, Centar za digitalno nakladništvo. ISBN 978-953-7809-93-5.
20. Lozić, J. (2019b). “Industrija digitaliziranih sadržaja stvara novu paradigmu teorije troškova: nulti granični trošak u digitalnom izdanju časopisa”, *Polytechnic & Design*, Svezak 7, br.1, 53.-59.

21. Lozić, J.; Milković, M.; Lozić, I. (2017). "Economics of platforms and changes in management paradigms: Transformation of production system from linear to circular model". *Economics and Social Development 26<sup>th</sup> International Scientific Conference on Economic and Social Development – "Building Resilient Society"*, pp. 125-136.
22. Moazed, A.; Johnson, N.L. (2016). *Modern Monopolies – What it takes to Dominate the 21st Century Economy*, Applico, LLC. ISBN 9781250091895.
23. Parker, G.G.; Van Alstyne, M.W.; Choudary, S.P. (2016). *Platform Revolution: How Networked Markets are Transforming the Economy and How to Make Them Work for You*, W.W. Norton & Company Ltd. ISBN 978-0-393-24913-2.
24. Reillier, L.C.; Reillier, B. (2017). *Platform Strategy: How to Unlock Power of Communities and Networks to Grow Your Business*, Routledge. ISBN: 978-1-4724-8024-8.
25. Rifkin, J. (2015). *The zero marginal cost society: The Internet of things, the collaborative commons, and the eclipse of capitalism*, Palgrave Macmillan, St.Martin's Press LLC. ISBN 978-1-137-28011-4.
26. Silva, A.T.; Moro, S.; Rita, P.; Cortez, P. (2018). „Unveiling the features of successful eBay smartphone sellers“. *Journal of Retailing and Consumer Services*. doi.org/10.1016/j.jretconser.2018.05.001.
27. Simon, P. (2011). *The age of the platform: How Amazon, Apple, Facebook, and Google Have Redefined Business*. Motion Publishing. ISBN 978-0-9829302-5-0.
28. Verdon, J. (2021). „Average Home Has 36 Things That Could Sell On EBay, Report Says“. *Forbes*. <https://www.forbes.com/sites/joanverdon/2021/03/16/average-home-has-36-things-that-could-sell-on-ebay-report-says/?sh=6351e5639b1b>. [16.04.2021.]

## COMMUNITY PARTICIPATION IN LOCAL ECONOMIC DEVELOPMENT

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### ABSTRACT

*Sustainable rural development is based on the preservation and balanced development of environmental, social and economic capital. A necessary precondition of sustainable rural development is the participatory involvement and networking of relevant stakeholders. The participatory process results in many benefits for local communities (e.g. more democratic local governance, better response to stakeholders' needs, improved efficiency of public services, etc.). The purpose of the paper is to elaborate the importance of participatory approaches in the process of revitalisation and sustainable development of rural areas. The aim of the paper is to identify development opportunities and constraints for local development viewed from the perspective of external stakeholders. The paper presents the results of the empirical research intended to identify the development opportunities and constraints of the City of Vodnjan – Dignano, a small town in the rural parts in Croatia, from the external stakeholders' perspectives. The research has involved three groups of external stakeholders (respondents from the two main economic activities, i.e. agriculture and tourism and from civil sector). The research showed various development opportunities and constraints, as well as the willingness of local stakeholders to become more involved in development processes. The research results contribute to a better understanding of the importance and long-term benefits of community participation in local development.*

**Keywords:** *community participation, sustainable development, rural areas, small towns*

### 1. INTRODUCTION

The long-term sustainable development of rural areas is a challenge faced by many local governments. These areas traditionally rely on agriculture, with the gradual strengthening of other activities, especially sustainable rural tourism. A necessary precondition of sustainable rural development is the participatory involvement and networking of relevant stakeholders. The participatory process results in many benefits for local communities (e.g. more democratic local governance, better response to stakeholders' needs, improved efficiency of public services, etc.). The local government have the responsibility to implement the participative approach by using various mechanisms (public hearings, focus groups, interviews, surveys, etc.). With such a complex approach, it is very important to inform, prepare and educate the relevant stakeholders on the mechanisms of participation. In the EU member states the LEADER program has been implemented since 1991, aimed to engage local stakeholders in the design and delivery of strategies, decision-making and resource allocation for the development of rural areas. The programme is realised on the basis of local development strategies implemented by Local Action Groups (LAGs). Until the end of 2018 it has been implemented by around 2,800 LAGs, covering 61% of the rural population in the EU and

bringing together public, private and civil-society stakeholders. The aim of the paper is to identify development opportunities and constraints for local development viewed from the perspective of external stakeholders. The paper presents the results of the empirical research aimed to identify the development opportunities and constraints of the City of Vodnjan – Dignano, a small city in the rural parts in Croatia, as determinants of future sustainable revitalisation. The research has involved three groups of external stakeholders (respondents from the two main economic activities, i.e. agriculture and tourism and from civil society). The research showed various development opportunities and constraints, as well as the willingness of local stakeholders to become more involved in development processes. The research results contribute to a better understanding of the importance and long-term benefits of community participation in local development.

## **2. PARTICIPATIVE MODELS OF LOCAL COMMUNITY DEVELOPMENT**

Cities, with their variety of stakeholders, are complex social and economic systems. According to OECD (2020), urbanisation continues to grow all over the world, with 70% of the global population expected to live in cities by 2050. Urban areas nowadays range from metropolitan areas (more than one million inhabitants), intermediary cities (between 50,000 and one million) and small towns with up to 50,000 residents. Overall 20 percent of the world's urban population lives in small towns. In Europe there are 22.6 % of the population living in metropolitan areas, 41.9 % in intermediary cities and 35.5% in small towns (UCLG, 2016). The paper is focused on small towns in rural areas. Rural space and rurality at the same time could be understood as: 1. real, material geographical space and time outside the boundaries of the (morphological) urban agglomeration, which is both a factor and a reflection of the process of satisfying basic human functions: to live and live in the community, to work, to be supplied, to be educated and to spend free time, 2. discursive social representations, formal and informal, of high cultural charge, with diversity and contradiction of meaning and 3. concepts that affect the understanding of spatial relationships, but also of life in general (Lukić, 2010). Small towns contribute to regional and rural development in five main ways: by acting as centres of demand/markets for agricultural products from the rural region, by acting as centres for the production and distribution of goods and services to their rural region, by becoming centres for the growth and consolidation of rural non-farm activities and employment, by attracting rural migrants from the surrounding region and by managing natural resources (IIED, 2017). Promoting good governance is one of the main drivers of local economic development. It should be based on some basic principles: accountability, transparency, participation, efficiency and coherence (EC, in: Kordej-De Villa et al. 2009). Successful development of local communities is a result of carefully designed and implemented development strategies. In the last four decades, many local authorities have, at least nominally, committed themselves to implementing the concept of sustainable development. The implementation of the concept of sustainable development requires the informed participation and collaboration of all interested stakeholders. A key feature of the participatory approach is the involvement of all those who may find their interest in the development and implementation of the strategy (Đokić, I. et al. 2010). Community participation requires the application of different methods, i.e. interviews, surveys, focus groups, ongoing dialogue and reflection on each phase. Comprehensive development is, therefore, a process in which no one's interest dominates and in which different, sometimes conflicting, interests are named, processed and resolved. Creating a participatory government in which different stakeholders identify problems and define goals, the whole community is consulted, different experts define professional measures, officials implement policies in the most efficient way possible and politicians support programme development at all stages, actively participate in the implementation and bear the political consequences, may be a more realistic but sufficiently ambitious goal of such programmes (Đokić, I. et al., in:



Kordej-De Villa, et al. 2009). Successful participatory process is achieved by the inclusion of all available stakeholders through a transparent process that works through and deals with power/knowledge conflicts, builds group relationships and brings pressure to bear on the agenda level (Walker, Shanon, 2011). The concept of stakeholders was originally developed in the corporate sector and relates to interests above those in traditional stockholding theory (Freeman, 1984). The World Bank and other development actors subsequently introduced a stakeholder theory that applies to all those affected by social and other types of development projects. Stakeholder theory continues to evolve in the business world as one of the fundamental principles of corporate social responsibility (Stubbs, in: Kordej-De Villa et al. 2009). The most common arguments in favour of citizens' involvement include better accountability and responsiveness to the needs of the recipients (Bardhan and Mookherjee, 2000), introduction of more democratic principles in local governance (Bishop and Davis, 2002) and improvement of public service delivery efficiency (Hoddinott et al., 2001; Bardhan, 2002, in: Kvartiuk, 2017). The participatory approach faces a number of limitations: it takes time, many stakeholders have different perspectives and expectations, a consensus between stakeholders is difficult to reach, etc. In EU countries LEADER ("Liaison Entre Actions de Développement de l'Économie Rurale" – "Links between the rural economy and development actions") is a local development method which has been used for 30 years in order to engage local stakeholders in the design and delivery of strategies, decision-making and resource allocation for development of rural areas. It was introduced in response to the failure of traditional, top-down, policies in order to address problems faced by many rural areas in Europe. Until the end of 2018 it has been implemented by around 2,800 Local Action Groups (LAGs), covering 61% of the rural population in the EU and bringing together public, private and civil-society stakeholders. For the 2014-2020 funding period, the applicability of the LEADER approach was further extended as Community-Led Local Development (CLLD) in rural, fisheries and urban areas. Under CLLD, local stakeholders form a local partnership that designs and implements an integrated development strategy. The strategy is designed to build on the community's social, environmental and economic strengths or "assets", rather than simply compensate for its problems (ENRD, 2021). Outside Europe, the World Bank has supported projects using a very similar "community-driven" methodology (Community-driven development - CDD) in 94 countries, with a total investment valued at almost 30 billion dollars (Wong, 2012). According to Kvartiuk (2017), the evidence related to participative governance in rural areas in transition countries indicates that individual decision-making to get engaged in the participatory process may be largely dictated by the mental models persistent within the communities. Besides, those citizens that believed that the government should be the ultimate public goods and services provider were less likely to get engaged. It has been noted that social trust improves cooperation and thus increases participation rates. A participative approach in planning and creation of strategic development documents has been implemented in Croatia since 2000. The project, managed by the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) and The Institute of Economics Zagreb has involved five local communities: three small cities: Virovitica, Samobor and Benkovac and two municipalities: Šolta and Lišane Ostrovičke. The project has shown that consensus must be reached in such a way that all stakeholders of the local unit are informed and involved in the preparation of the development document. Cooperation with stakeholders achieves transparency of the procedure and quick response to changes (Đokić et al. 2011). The paper presents the results of the empirical research aimed to identify, through a participatory process, the development opportunities and constraints of the City of Vodnjan – Dignano, a small city in the rural parts in Croatia, as determinants of its future sustainable revitalisation.

### 3. EMPIRICAL RESEARCH

#### 3.1. Research methodology

The city of Vodnjan - Dignano, Croatia, is the youngest city of one of the most developed regions in Croatia, Istria County. According to the latest Population census (2011) it has 6,119 inhabitants. The average population density is 58 inhabitants/km<sup>2</sup>, below the average for the County (73.78 inhabitants/km<sup>2</sup>). The identity of today's Vodnjan - Dignano is based on multiculturalism that stems from turbulent historical events. The first written mention of Vodnjan - Dignano appeared in 1150 under the name Vicus Atinianus. After the Second World War, Vodnjan - Dignano was part of the Municipality of Pula until 1993, when it received the legal status of its own Municipality. In 2015 the City of Vodnjan - Dignano adopted the City Development Strategy for the period from 2015 to 2020. The purpose of the empirical research was to elaborate the importance of synergy of local self-government and external stakeholders in the process of revitalisation and sustainable development of rural areas on the example of the city of Vodnjan - Dignano. The research hypothesis was: Participatory involvement of relevant stakeholders in the process of revitalisation of the economy of the city of Vodnjan - Dignano, as a unit of local self-government in a rural area, contributes to the joint identification of development challenges, priorities and opportunities for future development. The aim of the empirical research was to identify the development opportunities and constraints of the City of Vodnjan - Dignano through a participatory process as determinants of its future sustainable revitalisation. The authors have used the stakeholder analysis (Yang, 2013) in order to map the potential respondents. The main criteria for selecting respondents were twofold: the most important economic activities (agriculture and tourism) and active citizens involved in the civil sector. The questionnaire was sent to members of the agricultural association Agroturist Vodnjan (70 members), the Association of family accommodation renters of the City of Vodnjan (100 members) and non-governmental associations (41 NGOs). There were 73 respondents, i.e. 34.6%, of which 18 respondents from the agricultural association (25.6%), 30 from the renters' association (30%) and 25 from NGOs (73.2%). The research instrument was a questionnaire consisting of 20 questions. The empirical research was realised in November and December 2018. The paper presents the selected questions and answers. The data have been analysed by methods of descriptive analysis and nonparametric tests were used for inferential analysis, processed with the SPSS programme 24.0. The characteristics of the sample are presented in Table 1.

*Table 1: Structure of sample*

Group		Age (in %)					Total
		18-29	30-39	40-49	50-59	60 and more	
Agriculture	Female	33.3					11.1
	Male	66.7	100.0	100.0	100.0	100.0	88.9
Tourism	Female	100.0	72.7	25.0	75.0		60.0
	Male		27.3	75.0	25.0	-	40.0
NGO	Female	40.0	50.0	64.3	33.3	33.3	50.0
	Male	60.0	50.0	35.7	66.7	66.7	50.0

*(Source: Authors' research)*

There were one third of female and two-thirds of male respondents. Regarding the age structure, the largest group were those in the age group from 40 to 49, followed by those from 30-39, then from 50-59.

#### 3.2. Research results

The respondents were asked to evaluate the level of satisfaction with the quality of public services (5-point Likert scale) (Table 2). Nonparametric methods were used in the analysis because the variables were not normally distributed. The table shows the mean and mean rank of the satisfaction with the quality of public services, the Friedman test for *K* related samples

was used to test the difference between mean ranks for assessing the satisfaction of different public services, while the nonparametric Kruskal-Wallis test for  $K$  independent samples was used to test the difference between mean ranks of groups. The significance levels of test ( $p$ ) are shown in parentheses.

*Table 2: Satisfaction with the quality of public services*

Public service	Difference between services			Difference between groups			
	Mean	Mean rank	Friedman test $\mathfrak{R}^2$ ( $p$ )	Group	Mean	Mean rank	Kruskall Wallis test $\mathfrak{R}^2$ ( $p$ )
Health and social care	3.04	3.93	<b>70.677 (0.000)</b>	Agriculture	3.00	35.83	1.600 (0.449)
				Tourism	3.24	41.08	
				NGO	2.90	34.30	
Preschool and primary education	3.40	4.47		Agriculture	3.44	38.50	0.920 (0.631)
				Tourism	3.48	39.12	
				NGO	3.30	34.33	
Care for the elderly and infirm	2.70	3.15		Agriculture	2.56	33.61	0.907 (0.635)
				Tourism	2.80	39.52	
				NGO	2.70	36.93	
Communal infrastructure	2.92	3.55		Agriculture	3.11	39.06	4.606 (0.100)
				Tourism	3.12	42.54	
				NGO	2.63	31.15	
Public transport	2.30	2.45		Agriculture	2.33	38.00	3.538 (0.171)
				Tourism	2.60	42.30	
				NGO	2.03	31.98	
Environmental management	2.85	3.45		Agriculture	3.11	41.50	1.876 (0.391)
				Tourism	2.88	38.14	
				NGO	2.67	33.35	

*Bold = level of significance  $p < 0.05$*

*(Source: Authors' research)*

The highest grade is given to Preschool and primary education (3.40), while the lowest is to Public transport (2.30). Based on the Friedman test,  $\mathcal{R}^2=70.677$  ( $p < 0.05$ ) we can conclude that there is a significant statistical difference in mean ranks in satisfaction between different public services. Based on the Kruskal-Wallis test, we can conclude that there are no significant differences in the satisfaction of different groups with a particular public service. A slightly larger difference can be seen for Communal infrastructure, between Tourism group (mean=3.12), and NGO (mean=2.63), but this difference is not statistically significant at the significance level of 5% ( $\mathcal{R}^2=4.606$ ,  $p = 0.100 > 0.05$ ). In Table 3, we see that survey participants were most satisfied (5-point Likert scale) with Cultural events and manifestations (mean=3.52) while they were least satisfied with Sports and related activities (mean=2.99). Based on Friedman's nonparametric test, we conclude that there is a significant statistical difference in satisfaction between different activities  $\mathcal{R}^2=41.414$  ( $p < 0.05$ ). When we look at the difference in satisfaction of individual activities between different groups we see that, based on Kruskal Wallis test, we cannot reject the hypothesis that satisfaction is the same for all groups ( $p > 0.05$ ).

*Table following on the next page*

Table 3: Satisfaction with the offered activities

Activity	Difference between activities			Difference between groups			
	Mean	Mean rank	Friedman test $\mathfrak{R}^2$ ( $p$ )	Group	Mean	Mean rank	Kruskall Wallis test $\mathfrak{R}^2$ ( $p$ )
Cultural events and manifestations	3.52	2.42	<b>41.414 (0.000)</b>	Agriculture	3.44	34.67	0.635 (0.728)
				Tourism	3.60	39.46	
				NGO	3.50	36.35	
Concerts and entertainment	3.08	1.82		Agriculture	2.89	33.44	1.307 (0.520)
				Tourism	3.28	40.50	
				NGO	3.03	36.22	
Sports and related activities	2.99	1.76		Agriculture	2.89	34.67	3.321 (0.190)
				Tourism	3.28	42.98	
				NGO	2.80	33.42	

*Bold = level of significance  $p < 0.05$*

*(Source: Authors' research)*

From table 4 we see that respondents are more satisfied (5-point Likert scale) with the development of the city in the last ten years (mean=3.16) compared to local community participation in planning and decision making (mean=2.62). There is a statistically significant difference between different items based on Friedman's nonparametric test ( $\mathcal{R}^2=20.161$ ,  $p < 0.05$ ). Based on the Kruskal-Wallis test, that there is no statistically significant difference, at 5% significance level, in satisfaction between different groups regarding the analysed items.

Table 4: Respondents' satisfaction with the development of the city

Item	Difference between items			Difference between groups			
	Mean	Mean rank	Friedman test $\mathfrak{R}^2$ ( $p$ )	Group	Mean	Mean rank	Kruskall Wallis test $\mathfrak{R}^2$ ( $p$ )
Development of the city over the last ten years	3.16	1.67	<b>20.161 (0.000)</b>	Agriculture	3.33	38.44	3.968 (0.138)
				Tourism	3.40	42.40	
				NGO	2.87	31.63	
Local community participation in planning and decision-making	2.62	1.33		Agriculture	2.33	31.78	3.626 (0.163)
				Tourism	2.92	43.04	
				NGO	2.53	35.10	

*Bold = level of significance  $p < 0.05$*

*(Source: Authors' research)*

The next questions were related to the respondents' active participation in city development planning and their awareness of development opportunities (Table 5). Only one fifth (27%) have been actively involved in the planning process. The respondents from Agriculture participated mostly in the city development planning (33.3%), while NGOs participated the least (20.0%). Testing for differences between groups was done by Pearson's  $\mathcal{R}^2$  test based on a contingency table. We see that there are no differences between the group related to participation in planning of city development ( $\mathcal{R}^2=1.410$ ,  $p=0.494 > 0.05$ ). Two-third of respondents (68.5%) were informed about the development opportunities of their business activities. The most important information sources are Media and social networks (52.1%), the Tourism office (22.9%) Associations (16.7%) and the Local government (8.3%). The most informed group is Agriculture (88.9%), while the least informed is the NGO group (56.7%).

*Table 5: Respondents' active participation in city development planning and their awareness of development opportunities*

Group	Participation in city development planning	Awareness of development opportunities	Source of information			
			Media and social networks	Associations	Tourism office	Local government
Agriculture	33.3	88.9	62.5	37.5	0.0	0.0
Tourism	32.0	60.0	73.3	0.0	0.0	26.7
NGO	20.0	56.7	23.5	11.8	64.7	0.0
Pearson $\mathcal{R}^2$ (p)	1.410 (0.494)	5.746 (0.057)	<b>40.066 (0.000)</b>			

*Bold = level of significance  $p < 0.05$   
(Source: Authors' research)*

We cannot reject the hypothesis that there is no difference at 5% significance level, but it is possible to reject at 10% significance level ( $\mathcal{R}^2=5.746$ ,  $p=0.057$ ). The group Agriculture receives mostly information from the Media and social network (62.5%), and from Associations (37.5%). The group Tourism receives mostly information from Media and social networks (73.3%) and Local government (26.7%), while NGOs receive mostly information from the Tourism office (64.7), Media and social networks (23.5%) and Associations (11.8%). Based on Pearson's  $\mathcal{R}^2=40.066$  ( $p < 0.05$ ) we can conclude at 5% significance level that there is a statistically significant difference regarding the sources of information of different groups. When asked about the most significant development constraints (Table 6), respondents point to communal infrastructure (25.4%), local self-government (10.4%) and state land and property (7.5%).

*Table 6: The most significant limitation for current development of city*

Development constraints	Group			Total
	Agriculture	Tourism	NGO	
State land and property	22.2%	4.8%		7.5%
Market and billing	11.1%			3.0%
Production	11.1%			3.0%
Finance and criteria of EU funds		14.3%	3.6%	6.0%
Legal frame	11.1%			3.0%
Administration			3.6%	1.5%
Associations and clusters	22.2%			6.0%
Water costs	11.1%			3.0%
Labour force	11.1%		7.1%	6.0%
Supply of services			10.7%	4.5%
Cleanliness			14.3%	6.0%
Cultural and sports activities		4.8%		1.5%
Communal infrastructure		33.3%	35.7%	25.4%
Marketing		9.5%	10.7%	7.5%
Local government		19.0%	10.7%	10.4%
Accommodation offer			3.6%	1.5%
Inhabitants		14.3%		4.5%
Total	100.0%	100.0%	100.0%	100.0%
Pearson $\mathcal{R}^2$ (p)	<b>78.906 (0.000)</b>			

*Bold = level of significance  $p < 0.05$   
(Source: Authors' research)*

From the contingency table we see that for the Agriculture group the most significant constrain is State land and property (22.2%) and Associations and clusters (22.2%), while for the Tourism and NGO groups the most important constrain for current development of the city is Infrastructure (Tourism 33.3%, NGO 35.7%). Pearson's  $\chi^2$  test ( $\chi^2=78.906$ ,  $p<0.05$ ) indicates that there is a significant statistical difference between groups regarding their perception about limitations that affect current development of the city. In the next question, participants were asked to rank from 1 (less significant) to 3 (more significant) the three future investment priorities (Table 7). The Investments in communal infrastructure (2.26) were ranked slightly higher compared to Investments in entrepreneurial infrastructure; the difference is significant at the significance level of 10%. However it is not significant at the significance level of 5% ( $\chi^2=5.706$ ;  $p=0.058$ ). Different behaviour of groups was observed only for Incentives for entrepreneurs (farmers, renters and caterers), where NGOs have a slightly higher mean rank (2.26) compared to other groups, which is statistically significant at the significance level of 5%.

*Table 7: Future investment priorities*

Source	Difference between sources			Difference between groups			
	Mean	Mean rank	Friedman test $\mathfrak{R}^2$ ( $p$ )	Group	Mean	Mean rank	Kruskall Wallis test $\mathfrak{R}^2$ ( $p$ )
Investments in communal infrastructure	2.26	2.20	5.706 (0.058)	Agriculture	2.22	33.94	0.593 (0.744)
				Tourism	2.41	36.75	
				NGO	2.15	32.81	
Investments in entrepreneurial infrastructure	2.02	1.99		Agriculture	1.88	31.17	0.933 (0.627)
				Tourism	2.12	36.75	
				NGO	2.03	34.73	
Incentives and subsidies for entrepreneurs, farmers, renters, caterers, etc.	1.83	1.82		Agriculture	1.55	28.33	<b>10.393 (0.006)</b>
				Tourism	1.58	29.29	
				NGO	2.26	43.58	

*Bold = level of significance  $p<0.05$*

*(Source: Authors' research)*

In the next question the respondents were asked to choose the future spatial planning priorities, i.e. the revitalisation of the old town or development of other locations in the surroundings. As indicated in Table 8, most respondents (60.3%) prefer the revitalisation of the old town. Friedman non-parametric test for related samples concludes that there is not a statistically significant difference between the observed groups.

*Table 8: Future development priorities*

Future development priorities	Group			Total
	Agriculture	Tourism	NGO	
Revitalisation of the old town	77.8%	64.0%	46.7%	60.3%
Development of other locations outside the old town	22.2%	36.0%	53.3%	39.7%
Pearson $\chi^2$ ( $p$ )	<b>4.768</b> <b>(0.092)</b>			

*(Source: Authors' research)*

In the next question the respondents were asked about the values on which the future development should be based (Table 9).

The majority of them, similar to the previous answers, consider existing customs, cultural and traditional values as fundamental for future development. Friedman non-parametric test for related samples concludes that there is not a statistically significant difference between the observed groups.

*Table 9: Fundamental values of future development*

Foundations of development	Group			Total
	Agriculture	Tourism	NGO	
Existing customs, cultural and traditional values	77.8%	60.0%	50.0%	60.3%
New goals of future development and revitalisation	22.2%	40.0%	50.0%	39.7%
Pearson $\chi^2$ (p)	3.626 (0.163)			

*(Source: Authors' research)*

In the last question the respondents were asked to rank three priorities for future development, proposed as an open question. The three most significant priorities were the communal infrastructure (21.1%), followed by further development of the two main activities, i.e. agriculture and tourism (16.9%) and the revitalisation of the old town centre (11.3%). Pearson's  $\chi^2$  test ( $\chi^2=59.666$ ,  $p<0.05$ ) indicates that there is a statistically significant difference between the observed groups. For the group Agriculture the most important priority was state land and property, for the group Tourism, further development of the main economic activities (agriculture and tourism), while for the NGO group, the communal infrastructure.

#### 4. DISCUSSION AND CONCLUSIONS

The participatory process, as observed in many local communities in different countries, through models such as LAGs, CLLD or other community driven methods could result in many benefits, i.e. more democratic local governance, better response to stakeholders' needs, improved efficiency of public services, etc. The local government have the responsibility to implement the participative approach. Prerequisites for effective participation are motivating, informing and educating stakeholders about the mechanisms of participation. Although it is a complex and time-consuming process, the long-term benefits often outweigh the shortcomings of the process. The conducted empirical research, although on a relatively small sample of external stakeholders, indicates numerous possibilities for improving the local governance through community participation. Respondents mostly gave mediocre grades, e.g. the quality of public services was ranked with the average grade good, the highest grade being 3.40 for preschool and primary education, the lowest grade 2.30 for public transport and, similarly, for the offered activities, where the highest grade was 3.52 for cultural events and manifestations and the lowest, 2.99 for sports and related activities, the satisfaction with the development of the city over the last ten years 3.16, etc. The possibility of participating in the planning and decision-making process was also assessed as mediocre (2.62). Only one fifth have been actively involved in the planning process. On the other hand, two thirds of respondents were informed about development opportunities of their business activities. The local government was considered as the least significant source of information, indicating the need to develop a more effective communication strategy. The most significant development constraints are the communal infrastructure, the local government and the state land and property. The research has shown a statistically significant difference between groups regarding development constraints, which indicates the need to reach a consensus. Investment in communal infrastructure was recognised as the most important future public investment priority. Most respondents consider the revitalisation of the old town to be a future spatial planning priority.

As expected for rural areas, the majority of respondents consider existing customs, cultural and traditional values have been recognised as fundamental for future development.

The research has confirmed the willingness of local stakeholders to be better informed and more actively involved in developmental processes.

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## LITERATURE:

1. Đokić, I.; Rašić Bakarić, I.; Šišinački, J. (2010). *Strateški programi lokalnog razvoja – hrvatska iskustva*, Jesenski & Turk and Institute of Economics, Zagreb
2. ENRD (2021). *LEADER/CLLD*, European Network for Rural Development. Retrieved 08.01.2020. from: [https://enrd.ec.europa.eu/leader-clld\\_en](https://enrd.ec.europa.eu/leader-clld_en)
3. IIED (2017). *Why small towns matter: urbanisation, rural transformations and food security*, The International Institute for Environment and Development. Retrieved 15.01.2020. from <https://pubs.iied.org/sites/default/files/pdfs/migrate/10815IIED.pdf>
4. Kordej De Villa, Ž., Stubbs, P., Đokić, I. (2009). *Participativno upravljanje za održivi razvoj*. [online]. Zagreb: Institute of Economics, Zagreb. Retrieved 10.01.2021. from: <https://urn.nsk.hr/urn:nbn:hr:213:698965>
5. Kvartiuk, V. (2015). *Participatory governance in rural development: Evidence from Ukraine*. Studies on the Agricultural and Food Sector in Transition Economies, No. 78. ISBN 978-3-938584-84-2, Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Halle (Saale), Retrieved 08.05.2018. from: <http://nbn-resolving.de/urn:nbn:de:gbv:3:2-50273>
6. Lukić, A. (2010). *O teorijskim pristupima ruralnom prostoru*, Hrvatski geografski glasnik, 72 (2), 49-75. Retrieved 10.01.2018. from: <https://hrcak.srce.hr/64972>
7. OECD (2020). *Achieving the SDGs in cities and regions*. Retrieved 20.05.2019 from <http://www.oecd.org/about/impact/achievingthesdgsincitiesandregions.htm>
8. UCLG (2016). *Co-creating the urban future the agenda of metropolises, cities and territories*. United Cities and Local Governments. Retrieved 15.01.2020. from <https://habitat3.org/wp-content/uploads/4th-Global-Report-on-Local-Democracy-and.pdf>
9. Walker, P.E; Shannon, P.T. (2011). *Participatory governance: towards a strategic model*, Community Development Journal Vol 46 No S2 April 2011 pp. ii63–ii82, doi:10.1093/cdj/bsr011 (10.01.2021)
10. Wong, S. (2012). *What have been the impacts of World Bank Community-Driven Development Programs? CDD impact evaluation review and operational and research implications*, Washington, D.C. World Bank Group. Retrieved 10.01.2021. from: <http://documents.worldbank.org/curated/en/967431468161087566/What-have-been-the-impacts-of-World-Bank-Community-Driven-Development-Programs-CDD-impact-evaluation-review-and-operational-and-research-implications>
11. Yang, R.J. (2013). *An investigation of stakeholder analysis in urban development projects: Empirical or rationalistic perspectives*. International Journal of Project Management. Retrieved 01.02.2018. from <http://dx.doi.org/10.1016/j.ijproman.2013.10.011>



# **BLOCKCHAIN AND IMPACT INVESTMENT - CASE STUDY OF THE BLOCKCHAIN FOR ZERO HUNGER INITIATIVE AND ITS CONTRIBUTION TO THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS**

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## **ABSTRACT**

*The technological evolution that is taking place is drastically changing the way individuals, companies and governments operate, leading to social transformation. In a global context of alert to climate change and many of the irreparable damage to the planet, and to extremely serious social situations resulting from drought, war and other calamities, it is necessary to find alternatives for sustainable development and instruments that facilitate the implementation of actions to respond to global humanitarian needs. In terms of public and private management, policies aimed at sustainable development, environmental protection and the improvement of the quality of life and well-being of citizens have been gaining prominence. Impact investing, a disruptive financial mechanism, is managing to attract more and more followers. The paradigm shift is becoming more visible with the realization that something has to change in the concept of capitalism. Blockchain is a new technology that can be considered a new type within the Internet. The “Building Blocks Application” is one of the best expressions of systems based on blockchain technology for humanitarian purposes today. The main beneficiaries are refugees. Considering that environmental and social sustainability are two unavoidable themes of today, in this paper we analyse how blockchain interrelates with impact investing, especially to support the achievement of the United Nations Sustainable Development Goals. In terms of methodology, we anchored our research in the exploratory study and case study methods. So, in this exploratory study the main inference is the extraordinary benefit provided by the combination of the two tools – blockchain and impact investment - in social action such as the refugee aid. We believe that the combination of blockchain with impact investment can play a highly relevant role in achieving the Sustainable Development Goals, and thereby have a positive contribution to social and environment sustainable development.*

**Keywords:** *Blockchain, Climate Change, Impact Investment, Social Impact, Sustainable Development Goals*

## **1. INTRODUCTION**

Technology is changing faster than ever. The interconnectivity between devices, between systems, the relationship between the virtual world and the physical world are fundamental characteristics of the digital age. Blockchain technology is considered a new class - as was the internet - or a new type of technology within the internet. Although it can be used in various sectors, it is in the financial sector that it has had the greatest application and dissemination through crypto currencies (virtual currencies), which incidentally constituted one of the bases of its creation, as we will see in the third chapter. In juxtaposition, from the perspective of public and private management, policies aimed at sustainable development, environmental protection and improving the quality of life and well-being of citizens have been gaining prominence. In a global context of alert to climate change, to the irreparable damage of the planet, and to extremely serious social situations resulting from drought, war and other calamities, it is a worldwide emergency to use technology as a force for good; for instance, through the development of technologic tools that facilitate the implementation of actions that respond to humanitarian needs.

The merit of the so-called social economy is enormous and indisputable, but its sources of financing are usually unstable. The response to pressing environmental and social situations as well as their grandeur requires more and more financial sources. One of the biggest drivers of society remains the financial sector. But a new financial instrument has been gaining ground and is attracting a significant number of investors – impact investing – in which the funds invested have the primary objective of creating a positive environmental and/or social impact. The return over investment is longer than in classic funds. In the context of sustainable development and the need to respond to today's greatest challenges, the United Nations created the 2030 Agenda or Sustainable Development Goals. It comprehends the achievement of 17 major objectives through several goals defined for each objective. To achieve the objectives - essential to improve the quality of life for all humans and to minimize the destruction caused to the planet - it is necessary to involve all sectors of society without exception and a lot of money. The main objective of our study is to understand the two very recent instruments: blockchain and impact investment. In addition, we intend to understand how, based on new technological networks, it is possible to exponentially boost social projects, and the correspondent contribution to the Sustainable Development Goals. This work begins by describing in chapters 2 and 3 the concepts of blockchain and impact investing, highlighting the significant amounts that this financial subsector currently drives. Chapter 4 presents the summary of our case study: an innovative project that brings together the use of blockchain technology in the implementation of an action that directly impacts the SDG's, in this case, the 2nd Objective - Eradicate hunger. In the last chapter we present some final considerations. In terms of methodology, given that these are very recent concepts and, that their pairing is still under researched by the academy, the exploratory study method was chosen, “a category of observational research, considered useful in real cyber systems (related to techno-social behaviours), (Edgar & Manz, 2017). It is a methodology used to better understand a system for which there is no preconceived hypothesis or conceptual behaviour (Edgar & Manz, 2017). In chapter 4, a qualitative case study is presented (albeit briefly). According to Baxter & Jack (2008), qualitative case study is a research method that facilitates the exploration of a complex phenomenon in its own context using a variety of data sources. This ensures that the subject is not explored through a personal view, but through a variety of lenses that allow observing various facets of the phenomenon to be revealed or understood (Baxter & Jack, 2008). These two authors argue that: “there are two fundamental views on the methodology of the case study: one proposed by Robert Stake (1995) and the other by Robert Yin (2003). Both ensure that the main theme is properly explored and that the essence of the phenomenon is revealed” (Baxter & Jack, 2008, p. 545).

## **2. BLOCKCHAIN**

To better understand blockchain, it is important to understand how it came about. Despite its recent disclosure and implementation, according to some authors, including Beyer (2018), the “blockchain was invented by Stuart Haber and W. Scott Stornetta” (Beyer, 2018). The two inventors describe this technology in their research work published in 1991, as a computationally practical solution for digital documents, since they were generated with data records that could not be altered or tampered with. The system used a chain of cryptographically protected blocks to store the time-stamped documents. In 1992 ‘Merkle Trees’ were incorporated into the project, making it more efficient and allowing several documents to be aggregated in a single block. However, this technology was not widely used and the patent expired in 2004 (four years before the launch of Bitcoin). Thus, the creation of the blockchain is generally attributed to Satoshi Nakamoto. Nakamoto published a scientific article in 2008 (“Bitcoin: A Peer-to-Peer Electronic Cash System”) followed by the launch of the software called Bitcoin in 2009 (Beyer, 2018).

Beyer argues that, like many innovations, Bitcoin builds on past work that is often overlooked, so whoever wrote the original Bitcoin article did not steal that idea. In fact, Haber and Stornetta are cited three times in the Bitcoin article; this indicates some knowledge of common academic practice by Nakamoto (Beyer, 2018). Going back to the foundation of blockchain creation, it is important to note that network computing did not start in 2008 and that many of the concepts used in blockchain technology are the result of previous research. At the same time, the invention of Bitcoin - being an important element in Nakamoto's work - also provided innovative advances in the blockchain technology (created by Haber and Stornetta). With regard to blockchain technology itself, it appears in the context described by Iansiti and Lakhani (2017): ‘their contracts, transactions and records are among the structures that define our economic, legal and political systems. They protect assets and set organizational boundaries. They establish and verify identities and assign a chronology. They generate interactions between nations, organizations, communities and individuals. They guide social and administrative actions. Despite this, these essential tools, as well as the bureaucracy created to manage them, have not kept pace with the digital transformation of the economy. (...) In a digital world, the way we regulate and maintain administrative control has to change. The blockchain promises to solve this problem’ (Iansiti & Lakhani, 2017, p. 9). With blockchain, it is possible imagining a world in which contracts are incorporated into a digital code and stored in transparent and shared databases, but where they are protected from being erased, tampered with or revised (Iansiti & Lakhani, 2017). From the point of view of the authors, in this (blockchain) world ‘each agreement, process, task and each payment would have a registration and a digital signature that could be identified, validated, stored and shared. Intermediaries like lawyers, agents, bankers are no longer needed. Individuals, organizations, machines and algorithms could freely trade and interact with each other without much friction. This is the immense potential of the blockchain’ (Iansiti & Lakhani, 2017, p. 4). To put it simple, blockchain ‘is software - it is as simple as that’ (Williams, 2019, p. 8) and ‘the essential function of the blockchain is to group digital information creating a collection that cannot be changed, called ‘blocks’ (Williams, 2019, p. 19). Although blockchain was created with a focus on Bitcoin, Bitcoin is only the first manifestation of one strand of its potential - blockchain is technology (Kenigsberg, 2014). It is a highly complex technology, as Greenfield points out, blockchain is the first information technology that is equally difficult to understand by intelligent and highly capable people (Greenfield, 2018). Blockchain technology has revolutionized the way of storing, managing and transferring documents and values between digital identities and many sectors of the economy, facilitating business based on transaction processes. Like any new technology it is not exempt from criticism or flaws that need to be addressed. Several international organizations are working to increase security and encourage the ethical use of digital networks.

### 3. IMPACT INVESTMENT

Economic growth continues to be seen as the primary form of development. It is now admitted that many of the factors that contributed to this development had, among others, two major impacts: the environmental and the social. At the social level, although society has never had such a high disposable income throughout human history, poverty (to varying degrees) still affects a large part of the world population. The efforts of public and private institutions have not proved to be sufficient to effectively combat, among others, environmental problems and problems of social fragility. The current complexity of environmental problems arising mainly from climate change (in many cases they are generating more social dramas themselves), seems to be finally creating a new way of approaching management (especially business management) regarding the need to work based on strategies and objectives beyond the immediate financial profit and at any cost.

In this context, the impact economy in the form of impact investment may come to be considered as the greatest innovation to financing well-being, development and progress as “financial capital can intentionally achieve environmental and social results, in addition to financial returns” (Martin, 2013, p. 4). The concept of impact investment was an initiative of the Rockefeller Foundation in 2007 and designates all “investments made with the intention of generating financial returns simultaneously with social and environmental impact” (Murray & Arrillaga-Andreessen, 2017, p. 4). Impact investing (also called 'social finance', 'social impact investing', 'mixed value investment' or 'impact finance') has gained significant momentum in recent years” (Martin, 2013, p. 5). As Houérou (2018) points out, companies and individuals are increasingly adopting an enlightened view of their role in society. The simple idea that getting good results by doing good created new business opportunities and inspired investors to rethink where they put their money (Houérou, 2018). The operation of the impact investment market is similar to the traditional financial market Dexler & Noble, 2013. In terms of value, the impact investment market multiplied by five between 2013 and 2017 reaching \$US 228 billion globally. According to the Annual Report of the Global Impact Investing Network (GIIN) - one of the largest organizations linked to impact investment - published in April 2019, the value of the impact investment market had already reached US\$ 500 billion, and was expected to reach as much as \$US 1 trillion by 2020. Bringing impact investing to the fore would provide a huge boost to the achievement of the Sustainable Development Goals (SDGs). The cost of achieving the SDGs is high - \$US 7 trillion per year, including \$US 4 trillion for emerging markets only. According to Houérou (2018) “we must be creative in mobilizing private capital. Impact investing has the potential to increase trillions to meet the world's most urgent development needs, from preventing and mitigating climate change to providing the health and education services needed for lasting prosperity” (Houérou, 2018). Impact investing is evolving through an “explosion of new products” (Thorpe, 2019) and, according to Thorpe, “impact investing is increasingly being involved in discussions on how to fix capitalism” (Thorpe, 2019). So, it can be said that this is an important and growing subsector of financial markets and that the prospects for its positive influence on society could mean a real turning point for economy and development. As Shah says, this is a “young and dynamic industry, reflecting both progress and obstacles. For better or worse, investment has always meant influence, and this influence comes from a thousand choices each of us makes every day. Let's choose better - a world where our choices drive universal well-being and environmental prosperity” (Shah, 2019, p. 4).

#### **4. CASE STUDY – BLOCKCHAIN FOR ZERO UNGER INITIATIVE**

Digital technology is driving financial inclusion around the world, allowing for the first time more and more people and businesses to join the global economy. Although both concepts presented in the previous chapters still raise some doubts and several challenges, namely in terms of ethics and digital security, many world organizations are developing policies and implementing programs to “shape the future of the digital economy and the digital society”. The World Economic Forum (WEF), for example, proposes six measures to promote sustainability, inclusion and trust in the digital world: 1. Access and Adoption; 2. Responsible Digital Transformation; 3. Fit for purpose - informed governance; 4. Secure and Resilient people, processes and practices; 5. User centric interoperable digital identities; 6. Trustworthy Data Innovation, as described in Figure 1.

*Figure following on the next page*

Figure 1: Six Shared Global Outcomes



Source: World Economic Forum

Measures like these are becoming more and more important due to the rapid evolution of digital technologies and the growing number of citizens with access to the digital world at a global level to mitigate the risks and doubts of users, particularly in sensitive aspects such as ethics or financial ones. Blockchain has the potential to revolutionize, above all, the sectors and ecosystems in which trust is paramount; in this sense, many organizations, governments and civil society have been working with the objective of accelerating the strategic and responsible use of this technology. It is in this context that blockchain has been used to launch impact investment projects, with some of the most recent being related to humanitarian aid. It is not part of this paper to discuss potential conceptual inconsistencies. It is intended, through the case study, to understand the mechanics between the concepts of our exploratory study. Thus, the below we present a summary of the project that uses digital blockchain technology for social good and impacts the SDG's: 'Building Blocks - Blockchain for Zero Hunger'.

<b>Framework</b>
The blockchain has recently found its way into the impact investment community and a significant number of projects are being developed to take advantage of its characteristics giving rise to a new application called impact tokens. These tokens represent the link to one of the United Nations' Sustainable Development Goals, usually in the form of a quantifiable unit or metric that is linked to its origin (the activity that created it, which also represents its identity). Tokens can be used to make payments according to performance, register impacts along the supply chain (or supply chain) or to highlight actions to support the SDGs.
<b>Summary</b>
The 'building blocks' application is probably the best known of the applications of blockchain technology applied to humanitarian support; it uses blockchain infrastructure to provide direct cash assistance in refugee camps in Jordan. Notably, the World Food Program (WFP) uses blockchain to deliver food aid effectively to 106,000 Syrian refugees in Jordan.
<b>Description</b>
Despite being a relatively young technology, blockchain promises to reduce overheads, increase security for aid providers and beneficiaries, and ultimately ensure more funds are

redirected to end hunger. As a foundational technology akin to the internet, blockchain has the potential to improve many strands of humanitarian operation. Use cases aren't merely restricted to the current pilot and cash-based transfers; WFP is actively working to establish a broader blockchain architecture that powers the future of identity management and supply chain operations.

Together with the digital shift, blockchain can facilitate faster intervention in some of the world's most difficult operating environments. For vulnerable countries lacking financial infrastructure, blockchain could help humanitarian actors roll out life-saving cash assistance in matter of days should disaster strike.

As part of the pilot program called "Building Blocks", the World Food Program (WFP) has been testing the blockchain as a means to make money transfers more efficient, transparent and secure. Cash assistance and emerging digital opportunities empower families to meet their basic needs according to their priorities.

#### **How it works**

Users buy goods at designated stores depending on the role assigned to them. For an end user, the process is remarkably simple: they buy, usually at one of the designated stores and pay through the iris reader. The iris reading identifies the customer, confirms that he has enough balance and proceeds with the payment. Stores receive their monthly payments.

Early tests in Jordan show that the blockchain could help make it safe and efficient for WFP to offer beneficiaries more choice and more control over how and when they receive and spend their cash benefits – e.g. in retail shops, at ATMs, via mobile money, etc. WFP now aims to extend the value proposition of Building Blocks to explore unrestricted cash inside the refugee camps in Jordan to explore how the platform can support wider unrestricted cash distributions, starting with mobile money inside the refugee camps.

#### **Harnessing blockchain technology as an effective means to empower people to meet their essential needs**

Research shows that direct cash transfers to those in need can be the most effective and efficient way to distribute humanitarian assistance, while also supporting local economies. Globally, WFP is the largest agency delivering humanitarian cash, and in 2019 distributed record of \$2.1 billion, reaching over 28 million people in 64 countries.

But distributing cash depends on local financial institutions and, where possible, WFP prioritizes working through and strengthening the local financial ecosystem. However, in some contexts, financial service providers are either insufficient or unreliable. In others, refugees face restrictions in opening bank accounts. That's why in January 2017, WFP initiated a proof-of-concept project in Sindh province, Pakistan, to test the capabilities of using blockchain for authenticating and registering beneficiary transactions. The blockchain technology behind the project allowed direct, secure, and fast transactions between participants and WFP—without requiring a financial intermediary like a bank to connect the two parties.

After refining the project's approach, the next phase of Building Blocks was implemented in two refugee camps in Jordan. Now, over 100,000 people living in the camps can purchase groceries by scanning an iris at checkout. Cash value from WFP or other partners is stored in a beneficiary 'account' maintained on the blockchain, but the cash that beneficiaries receive or spend on goods and services is paid to the beneficiaries or to the retailers through a commercial financial service provider. Built on a private, permissioned blockchain, and integrated with UNHCR's existing biometric authentication technology—WFP has a record of every transaction. This not only saves on financial transaction fees in the camp setting but ensures greater security and privacy for Syrian refugees.

<b>A collaborative approach</b>
The blockchain opens the door for a future where the humanitarian community comes together around a neutral and interoperable infrastructure to harmonize and optimize the global aid effort, especially as the industry up scales cash programmes.
<b>From Building Blocks Project to Blockchain for Zero Hunger</b>
<p>The Building Blocks application is among one of the best expressions of systems based on blockchain technology for humanitarian purposes today.</p> <p>The main beneficiaries are refugees; anything that can facilitate cash-based transfers (CBT) is generally considered better and more dignified for refugees. WFP also benefits because it pays much less in transaction fees and, finally, donors also win because, from the start, their financial contribution is applied more effectively.</p> <p>WFP is harnessing blockchain technology as an effective means to empower people to meet their essential needs.</p> <p>The project has now completed its life cycle with the WFP Innovation Accelerator.</p> <p>In addition, a new Building Blocks partnership will allow Syrian women who participate in the UN Women's Cash for Work Programme to withdraw cash at a supermarket in a Jordanian refugee camp or make purchases directly. And since UN Women and WFP both validate each other's transactions via their own blockchain nodes, the system's security is increased.</p> <p>Now, WFP is interested in exploring the application of blockchain technology in areas as diverse as supply chain tracing and digital identity management.</p>
<p>Sources:</p> <p>Blockchain4Aid: <a href="https://blockchain4aid.org/dossier/building-blocks/#dxs-0">https://blockchain4aid.org/dossier/building-blocks/#dxs-0</a></p> <p>Blockchain for Zero Hunger: <a href="https://innovation.wfp.org/project/building-blocks">https://innovation.wfp.org/project/building-blocks</a></p>

This example allows us to clearly observe the efficiency of the blockchain in the management of a project within the humanitarian environment. During the study it was found that one of the great advantages of using blockchain is the ability to follow a process throughout all its steps. The Blockchain for Zero Hunger initiative very clearly describes the advantages of associating technology in supporting the management of social causes. From this point of view, it highlights the various benefits, including the reduction of financial costs. Also of note, from a humanitarian perspective, is the element about the dignity of the beneficiaries.

## 5. FINAL CONSIDERATIONS

Regardless of the major problems that the humanity currently faces, it is going through an exceptional period in terms of development, namely in technology. Presenting itself as a complex technology, and still with enormous upgrade opportunities, blockchain can be used far beyond the crypto currencies that have been giving it more and more visibility. From the theoretical-conceptual perspective, it is important to highlight the recovery of a concept that had not been developed and that ended up creating one of today's the most disruptive financial developments: the virtual currency. Impact investing, being also a disruptive innovation, is attracting more and more investors. The growing number of projects and the very significant increase in the amounts involved make it possible to infer that this may become a preferred form of investment for many managers and investors. A new paradigm is becoming more visible with the realization that something has to change in the concept of capitalism, that is, without disregarding the need to make profit. Thus, the combination of blockchain with impact investment can play a highly relevant role in achieving the Sustainable Development Goals, and thereby contribute to the social well-being, citizens' happiness, fight poverty, regenerate natural ecosystems, fight climate change, etc. Managers and investors can (and should) support this mission given that fact that with a global will we could indeed end poverty and that can

take action avoid the worst impacts of climate change. It is a huge challenge and a great responsibility, but this study shows that anyone can contribute with effective solutions and that support can (and should, in our opinion) come from individuals and organizations, including academia. Based on the example presented in the short version of our case study in chapter 4, we can anticipate that many similar projects can be developed. It also is important to give credit to the WFP's manager who had the idea of using blockchain to create a safer and more dignifying process to support refugees<sup>1</sup>. As for the criticism and resistances on both blockchain and impact investing concepts it is possible to predict that they will be minimized over time due to the constant technological evolution and the work of several organizations in order to guarantee a safer digital and ethical world.

### 5.1. Future Studies

We consider very relevant to create technologic tools for measuring the results of impact investment in order to help investors and fund managers to make impact investment decisions based on accurate data. We also believe that's important to deepen the debate about the financing of the social economy and the role of the impact economy within the context of social economy.

### LITERATURE:

1. Baxter, P., Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report*, Volume 1(4), 542–559.
2. Beyer, S. (2018). *Blockchain Before Bitcoin: A History*. <https://blocktelegraph.io/blockchain-before-bitcoin-history/>: BlockTelegraph.
3. Drexler, M., Noble, A. (2013). Impact Investing: Putting Ideas Into Practice. *SSI Review*. [https://ssir.org/articles/entry/impact\\_investing\\_putting\\_ideas\\_into\\_practice](https://ssir.org/articles/entry/impact_investing_putting_ideas_into_practice)
4. Edgar, T.W., Manz, D. O. (2017). *Research Methods for Cyber Security*. Elsevier.
5. Greenfield, A. (2018). *Radical Technologies - The Design of Everyday Life*. Verso.
6. Iansiti, M., Lakhani, K. R. (2017). The Truth about blockchain. *Harvard Business Review*, *Iansiti*, M(January-February), 1–11.
7. Kenigsberg, M. (2014). *What is Bitcoin and What Makes it Unique?* Bitcoin Chaser. <https://bitcoinchaser.com/cryptocurrency/bitcoin-btc>
8. Le Houérou, P. (2019). Rising Momentum for Impact Investing. *IFC-ORG*. <https://ifc-org.medium.com/rising-momentum-for-impact-investing-b2ac17580298>
9. Martin, M. (2013). Making Impact Investible. *Impact Economy Working Papers*, 4, 1–36. [https://www.impacteconomy.com/download/Impact Economy - 2013 - Making Impact Investible.pdf](https://www.impacteconomy.com/download/Impact%20Economy%20-%202013%20-%20Making%20Impact%20Investible.pdf)
10. Murray, S., Arrillaga-Andreessen, L. (2017). *The Rockefeller Foundation: Innovation in Social Finance*. Stanford Graduate School of Business.
11. Shah, S. (2019). *ANNUAL IMPACT INVESTOR SURVEY 2019*.
12. Thorpe, D. (2019). *Impact Investing Trends in 2019 Include Greater Focus On Gender*. Forbes. <https://www.forbes.com/sites/devinthorpe/2019/05/01/impact-investing-trends-in-2019-include-greater-focus-on-gender/#4153ca2f2aa9>: Forbes.
13. Williams, S. P. (2019). *Blockchain: The Next Everything*. Scribner.

<sup>1</sup> The World Food Programme has achieved another milestone after the creation of the Building Blocks Project in 2017. In May 2020 it launched "The Atrium": UN blockchain solutions under one roof. The Atrium has been established by the United Nations Innovation Network (UNIN), in collaboration with the WFP Innovation Accelerator, UNICEF Innovation and UNDP Innovation. The Atrium's goal is to help staff members from across the United Nations (UN) system to learn about and apply blockchain technology in their roles and for their organization's needs. <https://wfpinnovation.medium.com/welcome-to-the-atrimum-7c4182d3682d>. Last accessed 22.04.2021.



## TOURISM ENTREPRENEURS AND THEIR VISION FOR REOPENING WITH COVID-19

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### ABSTRACT

*Since 2020, the pandemic created by COVID-19 has led to the opening and alternately closing of the world. These are moments of great reflection on sustainable ways of operationalizing tourism and providing safety in tourist destinations. This study aimed to register the entrepreneurs' opinions in the accommodation sector on Madeira Island challenged with an opening scene after the first wave of the pandemic and to compare it with how tourism was reactivated. In the responses of 76 business managers, the position that the reopening of tourism should have given priority to the most relevant markets, corresponding with the tourist profile in Madeira, stands out, instead of focusing on regional and national tourism. However, if the regional government were to intervene and impose rules for opening accommodation, or in a coordinated opening, even though the majority agreed, 26% to 34% spoke out against these actions. It should be noted that entrepreneurs demonstrated a willingness to invest in disinfection devices and to improve operating procedures in favour of better hygiene and protection for guests and employees. During the months following the reopening, it was found that no government restrictions were imposed, with the entrepreneurs themselves adapting the different openings of hotel units according to their respective vision of the evolution of the market, having reopened 87.3% of the units in the market. Occupancy rates evolved to approximately 30% in the months from August to October, with the promotion policy for national and regional markets having an effect, where the drop registered in July to October was 27%, against 75% international markets.*

**Keywords:** *Accommodation, COVID-19, lodging, tourism, recovery scenario, 1st wave*

### 1. INTRODUCTION

According to the World Health Organization (2021) “globally, as of 2:50 pm CEST, 14 April 2021, there have been 136 996 364 confirmed cases of COVID-19, including 2 951 832 deaths, reported to WHO. As of 14 April 2021, a total of 733 287 398 vaccine doses have been administered”. During the COVID-19 lockdown, only basic economic activities were active, and the condition of stagnation lead many entrepreneurs and policymakers to think about alternatives to reactivate the economy and recover jobs. Consequently, tourism has collapsed in a dizzying way, seeing the closing of tourist destinations, airports, cruise boats that could not go to the port, remaining in the open sea due to the closing of operations on land (Gössling, Scott and Hall, 2020). The World Tourism Organization (WTO) created an initial scenario for the year 2020 with a decline of up to 30% in international due to COVID-19 compared to 2019. However, with the high transmission power of the disease, the scenarios change rapidly causing the UNWTO to update the scenario on May 7, 2020, to 50-80% (UNWTO, 2020a, 2020b).

This decline is comparable with 5 to 7 years of growth in exports related to international tourism (IATA, 2020). The Portuguese government provided financial aid to assist tourism entrepreneurs, as well as updated legislation to protect tourism workers. However, a destination like Madeira Island that depends heavily on the operability of the airlines requires that the issuing markets remain faithful to the destination. In terms of people arriving in the Autonomous Region of Madeira, in 2019 there were 1.48 million visitors, with a decrease of 65% in 2020 (Travel BI, 2020). Thus, this work aims to consult the accommodation sector, which is extremely important for the local economy, on sustainable ways of resuming activity and compare with the way that the summer of 2020 took place regarding the sector.

## **2. LITERATURE REVIEW**

### **2.1. Impacts from covid-19 on the global tourism**

Infectious disease severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has fever, cough and difficulty breathing as common symptoms and has an incubation period of 2 to 14 days. This disease is transmitted by close contact with infected people, or contaminated surfaces received the name COVID-19 as a reference to the year of its discovery. This is a different virus from the SARS-CoV coronavirus that was identified in 2002 (DGS - Direção-Geral da Saúde, 2020a). The 2002 version caused the first major pandemic of the millennium to hit the whole world and the reasons were attributed to the lack of rules for biosafety in China related to the consumption of proteins found in game meat. The transmission capacity was registered because of the rapid progression due to the lack of knowledge and preparation in the control of infections in hospitals, and by flows of people travelling by air. In 2003, the economy and public health sectors were strongly affected by the disease, with society, in general, suffering a 10% mortality rate in more than 8,000 thousand affected people (Cheng et al., 2007). The World Health Organization (WHO) defined the outbreak of COVID-19 as an international public health emergency concern, admitting on March 8 that the virus was a global threat. On March 11, WHO declared the COVID-19 pandemic (Matt et al., 2020). The pandemic present on all continents has forced governments to define strategies to manage the outbreak of COVID-19. Consequently, social exclusion was enacted in a variety of countries as a way of reducing transmission capacity (Anzai et al., 2020). Among many measures to prevent the transmission of the virus, there was also the restriction of travel of any kind, the closure of schools, public and social events. Also, to avoid direct contact with the population, all professional activities compatible with the remote work went on home-office mode. Based on the epidemiological knowledge of SARS and MARS Coronavirus, Chinazzi et al. (2020) addressed the travel restrictions imposed by several countries in February 2020 and the reduction in transmission in Wuhan, China. To this end, they considered scenarios with a 40% and 90% reduction in inbound and outbound traffic from China, excluding islands. It was concluded that even reducing 90% of trips, the import of cases is reduced, which in turn will reappear after two to three weeks in another place. There is also a slight attenuation in the transmission of the virus, but it can be reduced exponentially if the restrictions are synchronized with interventions by public health authorities and changes in society's behaviour to act in an even more responsible way. Concerning the hospitality industry, the evolution of the pandemic led to the closure of activity. For example, in Portugal, hotels closed voluntarily and those that did not close, had to adapt to the new situation created by COVID-19. In a survey of tourist accommodation and food and beverage companies, carried out by the Portuguese Hotel, Restaurant and Similar Association (AHRESP), 74% of the 1 819 respondent companies closed indefinitely with some considering not to open again (AHRESP, 2020). Contingency plans were created that include reinforcement of cleaning and disinfection measures to avoid contamination of employees and customers. Also, the Directorate-General for Health (DGS), which has always stressed that each company must develop contingency plans, issued official guidelines with the procedures of "prevention,

control and surveillance in hotels", as well as in companies (DGS - Direção-Geral de Saúde, 2020c). Other countries have proceeded with measures to close tourist activities due to restrictions on the movement of people across borders and according to the degrees of infection by COVID-19. In the case of Germany, the hotel industry for tourist purposes closed, having authorization only for necessary reasons, such as the accommodation of health professionals, accommodation of people at risk or in quarantine (DEHOGA, 2020). It was a matter of a short time before the economy started to suffer from the reduction and deprivation of activity, a prolonged stagnation that began to influence its operationality, the net results and the acquisition of value of companies, products, and services. Society and its habitual routines started social distancing, depriving themselves of loved ones and resuming fulfilling essential functions for their survival, such as the labours in the frontline of the attack on COVID-19 and others incompatible with social isolation. Hotels that were still open started to experience sharp drops in their occupancy rates, negatively affecting RevPAR and consequently their total income. In Madeira alone, from March to August 2020, 99.2% of the hotel business closed its activity and in April, 100% of cruise ships cancelled their call at the Autonomous Region of Madeira (RAM) (DREM, 2020). Because of the pandemic, the giant meta-search and accommodation booking platforms Booking and Expedia made it possible to cancel confirmed non-refundable reservations, refunding the full amount without negotiating with hoteliers. This unilateral decision affected hotels, which for example in Spain raised a question of business ethics and contributed to the loss of confidence in the online platform (Hosteltur, 2020).

## 2.2. Madeira tourism recovery from COVID-19

The RAM is a region with political freedom, but which respond to the Portuguese plan of confinement. However, given the low rate of infected individuals and high dependence on tourism, in 2020 RAM was the first geographical area to open for tourism. Although with many precautions, businessmen continued to work to attract tourists regardless of their nationality and always focused on the most representative markets as shown in Figure 1.

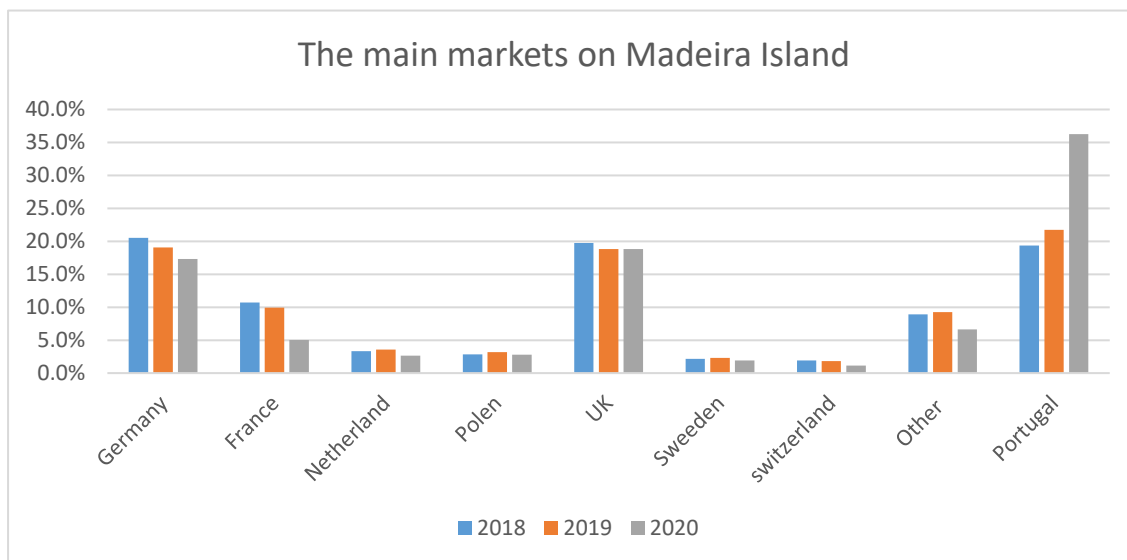
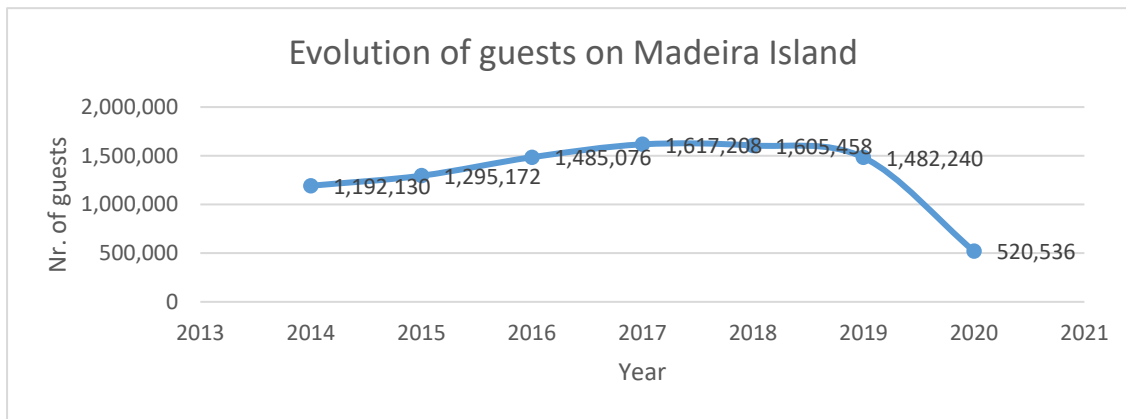


Figure 1: An overview of the most representative markets on Madeira Island  
(Source: Travel BI, 2020)

The Portuguese market dominates, closely followed by Germany, the United Kingdom and France. Other fractions represented less than 5% of the market share, and the total variation to 2019 was in the negative direction with 65%, as can be seen in Fig. 2 (Travel BI, 2020).



*Figure 2: Overall evolution of guests from Madeira Island  
(Source: Travel BI, 2020)*

According to Portuguese open data for tourism platform, Travel BI (2020), revenue per available room (RevPAR) in Madeira decreased from 44.31 Euros in 2019 to 23.09 Euros in 2020. This is one of the indicators used to monitor tourism. Due to COVID-19, strategies were developed to continue supporting tourism in Portugal, addressing the employment situation and tourist companies. Credit lines were opened to finance startups and the flexibility of tasks with Turismo de Portugal or financial support programs such as the Community Support Framework, Strategic Reference Framework, or Portugal 2020 were approved. the rigidity of the “credit default, specific regime of the relationship between companies in the sector regarding reservations for accommodation services located in Portugal”, stimulating the areas of business operation (Turismo de Portugal, 2020a). Among many programs, the “Clean & Safe Establishment” seal stands out for companies complying with a set of conditions related to hygiene and safety in a proximity circle of COVID-19, and “complying with the recommendations of the Directorate-General of Health to avoid contamination of spaces with SARS-CoV-2” (Turismo de Portugal, 2020c). Specifically for RAM, a specific line was created to combat the economic crisis and for non-profit entities and artists based in RAM, linked to the Arts and Culture sector. With 23 eligible applications, the payment of non-reimbursable expenses due to the interruption of their activities could be made, and even more important it helped in the process of mitigation and preservation of the same entities (Secretaria Regional de Turismo e Cultura, 2020a). In conjunction with the Madeira Promotion Association (AP Madeira), it was invested in strengthening confidence to visit Madeira. To this end, a set of “recommendations for the resumption of tourist activities” was launched at the Regional level, which is the basis of the certification process and of good practices concerning the management of biological risks, which will be available to the associated companies. The objective was to promote the image of the destination Madeira as a “Covid safe Tourism Destination” (Secretaria Regional de Turismo e Cultura, 2020b).

### 3. METHODOLOGY

For this paper, a survey was developed for sampling the universe of hoteliers and entrepreneurs of local accommodation in the RAM. Thus, it was formed by 209 hotels and 953 units of local accommodation in Madeira (RNT, 2020), the representative sample of RAM was composed of 76 companies that responded online to the survey, reporting a sampling error of 10.87% in a 95% confidence interval. The purpose was to question the ways considered sustainable and coherent for the reopening of accommodation to the public. Respondents answered questions about strategy and the percentage of breaks in the performance evaluation indicators, such as the net occupancy rate, total income and RevPar.

The last section comprised questions about changes that are in line with security trends after COVID-19, the estimated gross value for adaptation to the new reality, examples of adaptations and lastly, it was possible to collect observations made by the respondents. The alternatives presented for the reopening of tourism in Madeira were evaluated on a Likert-type scale with the following designation: 1- Strongly disagree; 2- I disagree; 3- I do not agree or disagree; 4- I agree; 5- I totally agree. Tourism was reactivated in the summer of 2020 and with the escalation of the increase in the number of infected people on Portugal mainland, the lockdown was again installed to contain the 2<sup>nd</sup> wave of the pandemic. That said, the second research question is based on the question of whether the responses indicated in the surveys were in line with the measures adopted by the Government.

## 4. RESULTS AND DISCUSSION

### 4.1. The vision of entrepreneurs and sustainability for the reopening for activity

From the small universe represented by accommodation companies in Madeira, the typology of accommodation was differentiated by hotel group (18.4%) in which the three largest registrations exhibit between 1 to 3 establishments, hotel tourist development (38.2%) in which the three largest registrations they have an accommodation capacity between 51 to 150 and 251 to 500 beds, and the local tourist accommodation (43.4%), in which the three largest registries have a capacity between 6 and 30 beds. Thus, it is considered that the answers represent much of the number of beds available in Madeira. Most respondents fully agreed with the implementation of screening tests at access points in the Autonomous Region of Madeira; with the development of specific health security procedures for the tourism sector; and with the implementation of health control measures in the Tourism sector, they were responses at the highest values of the scale. Indeed, the accommodation sector adhered to the clean and safe label and provided a sense of safety to their guests (Turismo de Portugal, 2020c) and they were supported by the Secretaria Regional de Turismo e Cultura (2020b) to enhance operational procedures aiming to reduce cross-contamination and contribute for the “Covid safe Tourism Destination”. However, the respondents varied the degree of agreement about the imposition of rules for the reopening of accommodation in Madeira carried out by the government. Although the majority fully agreed, 26.3% of respondents did not agree with this measure. As for the coordinated reopening of the offer, the respondents also registered a superiority for the maximum degree of agreement, but 34.3% of the individuals disagreed. Regarding the fact that each management should decide on the best way to resume the activity, the five values of the scale were marked, leaving 71.1% prevailing for the highest degrees of agreement. Entrepreneurs were asked about the percentage of accommodation opened in Madeira, with 36.8% responding that it should be in full, and immediately 17.1% suggested opening with half their capacity, varying other incidences of greater value in the responses at the opening at 60 % and 80%. Concerning the opening of tourist accommodation to the regional, national (domestic), German, English, and French markets (see Fig. 3), the level of responses was with a high degree of agreement, leaving uncertainties to the countries issuing markets that were heavily affected by COVID-19. Opening, for example, to the Italian market, it registered 36.8% agreement and 31.6% for neutral entrepreneurs and for those who disagreed with this action.

*Figure following on the next page*

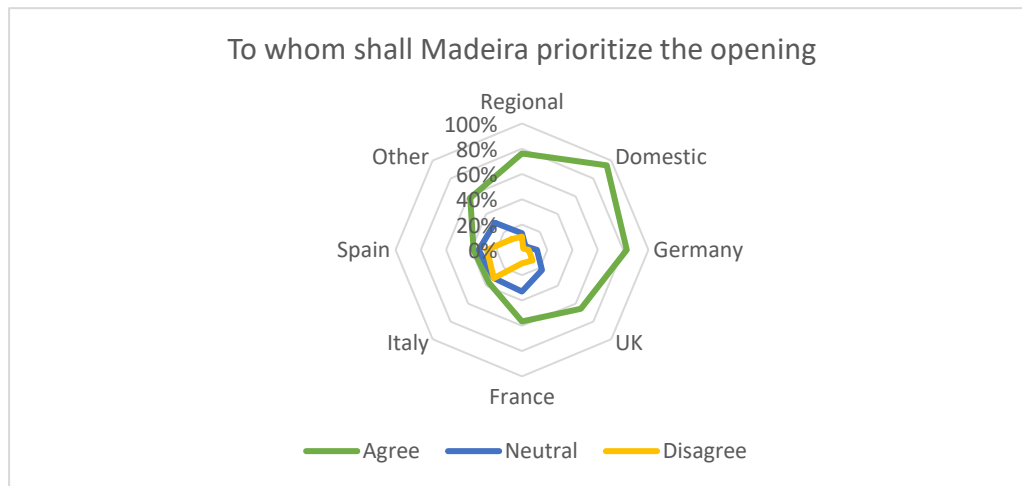


Figure 3: Satisfaction for opening to dominant markets  
(Source: The authors)

Other markets deserved recognition from respondents and those are those that offer controls at the source, especially countries with a lower infection rate, or that the control of outbreak and impact of infection is proven. The Nordic countries, Eastern European countries and the Canary Islands were frequently appointed to be part of the strategy for the recovery of tourism in Madeira. Analysing the summer of 2020, the facts point out that Portugal was the key market followed by the issuing countries UK and Germany. When comparing the homolog period, June registered 96.1% losses and with the reopening, this gap reached only 59.8% at the end of September (Travel BI, 2020). Still, concerning the reopening, figure 4 indicates the state of a decision of each management since not resuming the activity, going mostly through operational restrictions of 50%, to an opening without any restriction.

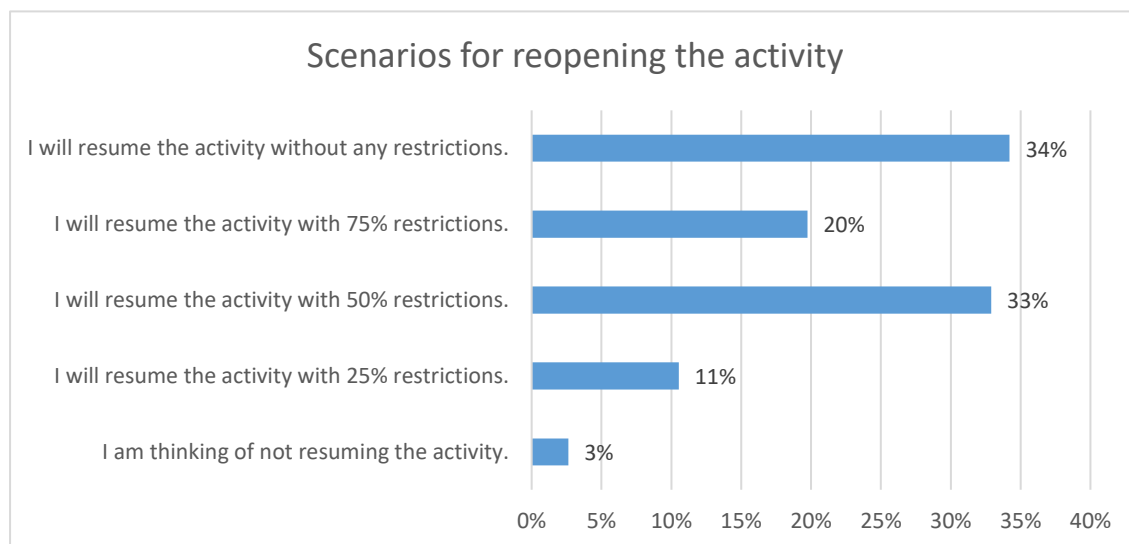


Figure 4: Levels for resuming the hotel activity on Madeira  
(Source: The authors)

Concerning 2020, the estimated breakdown percentages for establishments, or groups, the net bed occupancy rate was based on an average value of 62.4%, total revenues of 58.4% and 57.0% of RevPAR. Given this scenario, respondents mostly considered that it would be feasible to open the sector already in the months of June-July 2020, with some references to the opening between January and June 2021.

Thus, 81.6% of the respondents indicated that they would proceed with some type of changes that respond to new safety and security trends after COVID-19, with a maximum of 200 000 euros, the modal value was 5 000 euros. The examples of adaptations over 30 responses were:

- Obtaining cleaning certificates.
- Obtaining disinfection labels.
- Investing more in personal protective material for workers.
- Making changes to food safety and hygiene in buffets.
- Increasing distance between tables in the restaurant, bar, and entertainment area.
- Providing a digital option for check-in and collection of the room key.
- Providing employees and customers with training on hygiene and safety.
- The use of marketing and advertising techniques based on post-COVID-19 adaptations.
- Health control measures.

The least quoted suggestions were:

- Providing masks and disinfectant gel in rooms and other strategic places.
- Installing sensors with a timer to automate water taps and soap and paper dispensers.
- Developing room service with the possibility of offering meals.
- Modifying the reception to prevent accumulation of people and form of contact with customers.
- Introducing intelligent machines such as robots to perform customer services.
- The purchase of disinfection equipment such as ozone generators, or sterilization with ultraviolet light.

After confinement, AHP (2020, p.1) found that in Mainland Portugal and until the end of the year, “the occupancy rate did not exceed 30% and revenues decreased by up to 75%”. Given that they resorted to the Lay-off and that they were not legally able to dismiss workers, some companies did up to 5% of the workers, affecting those who were on an experimental basis and “36% of the companies did not renew fixed-term contracts” (AHP, 2020, p. 2). Although the hotel industry did not close completely during the pandemic peaks, Madeiran businesspeople diverge in the values and goals recorded in Mainland Portugal, where the reopening scenarios have almost three-quarters of the hotel opened since July, and “more than 50 % think to open with their full capacity ... and on average 25% open with capacity and services reduced up to 50%, and 15% up to 80%” (AHP, 2020, p. 2).

## 5. CONCLUSION

Responding to the proposed objective, although increasing the share of the regional proximity market, Madeiran entrepreneurs considered that priority should be given to the relevant markets to open their operations, coinciding with the usual tourist profile (DREM, 2020; Travel BI, 2019). In short, the pandemic allows a reflection on the impacts on tourism with all its conjectures, as well as on policies adopted for its management and the research studies related to all these occurrences (Gössling, Scott and Hall, 2020). At this moment, it is expected that consumers of tourism products will be motivated to opt for enterprises adhering to the “Clean & Safe” quality label (Turismo de Portugal, 2020c), or “Covid safe Tourism Destination” (Secretaria Regional de Turismo e Cultura, 2020c). However, it is not clear how the accommodation sector can guarantee good management and react effectively in the event of sporadic cases of COVID-19 (Gössling, Scott and Hall, 2020). Tourism is one of the biggest socio-economic activities on Madeira Island, and dependency can lead to challenges to overcome and comparable to the island of Bali which heavily depends on tourism revenue and

is prone to natural disasters and tourism crisis. Tourism recovery is gauged by a set of indicators such as the consumer 'confidence in the destination and the tourist arrivals (Gurtner, 2016). Regarding the fact that Madeira felt the impact of the pandemic only in November, tourism was prepared to receive tourism in the summer of 2020 with several procedures to deal with eventual outbreaks. Moreover, island accessibility worked as a barrier to the COVID-19 because with the air-borders being closed during the 1<sup>st</sup> wave on Mainland, the potentially infected tourists could not reach the island. Based on the evidence, the view of Madeiran entrepreneurs was in line with the National strategy for reopening tourism.

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## LITERATURE:

1. AHP. (2020). *ASSOCIAÇÃO DA HOTELARIA DE PORTUGAL IMPACTO DA COVID-19*. [Online]. Available at: <https://www.hoteis-portugal.pt/site/details?type=press-release&id=228&pid=24> [Accessed 9 June 2020].
2. AHRESP. (2020). Conclusões do inquérito AHRESP Covid 19. *AHRESP*. [Online]. Available at: <https://ahresp.com/2020/04/conclusoes-do-inquerito/> [Accessed 17 May 2020].
3. Anzai, A., Kobayashi, T., Linton, N. M., Kinoshita, R., Hayashi, K., Suzuki, A., Yang, Y., Jung, S., Miyama, T., Akhmetzhanov, A. R., et al. (2020). Assessing the Impact of Reduced Travel on Exportation Dynamics of Novel Coronavirus Infection (COVID-19). *Journal of Clinical Medicine*, 9 (2), p.601. [Online]. Available at: doi:10.3390/jcm9020601.
4. Cheng, V. C. C., Lau, S. K. P., Woo, P. C. Y. and K. Y. Yuen. (2007). Severe Acute Respiratory Syndrome Coronavirus as an Agent of Emerging and Reemerging Infection. *Clinical Microbiology Reviews*, 20 (4), pp.660–694. [Online]. Available at: doi:10.1128/CMR.00023-07.
5. Chinazzi, M., Davis, J. T., Ajelli, M., Gioannini, C., Litvinova, M., Merler, S., Piontti, A. P. y, Mu, K., Rossi, L., Sun, K., et al. (2020). The effect of travel restrictions on the spread of the 2019 novel coronavirus (COVID-19) outbreak. *Science*, American Association for the Advancement of Science. [Online]. Available at: doi:10.1126/science.aba9757 [Accessed 27 March 2020].
6. DEHOGA. (2020). *DEHOGA Bundesverband: DEHOGA informiert: Coronavirus*. [Online]. Available at: <https://www.dehoga-bundesverband.de/presse-news/aktuelles/dehoga-informiert-coronavirus/> [Accessed 17 May 2020].
7. DGS - Direção-Geral da Saúde. (2020a). *Perguntas Frequentes - COVID-19*. [Online]. Available at: <https://covid19.min-saude.pt/perguntas-frequentes/> [Accessed 25 March 2020].
8. DGS - Direção-Geral de Saúde. (2020c). *Orientacao e procedimentos de prevenção, controlo e vigilância em hotéis*. [Online]. Available at: <https://drive.google.com/viewerng/viewer?url=https://www.dgs.pt/directrizes-da-dgs/orientacoes-e-circulares-informativas/orientacao-n-0082020-de-10032020-pdf.aspx> [Accessed 17 May 2020].
9. DREM. (2020). *Início*. [Online]. Available at: <https://estatistica.madeira.gov.pt/> [Accessed 29 May 2020].
10. Gössling, S., Scott, D. and Hall, C. M. (2020). Pandemics, tourism and global change: a rapid assessment of COVID-19. *Journal of Sustainable Tourism*, 29 (1), Routledge., pp.1–20. [Online]. Available at: doi:10.1080/09669582.2020.1758708.



11. Gurtner, Y. (2016). Returning to paradise: Investigating issues of tourism crisis and disaster recovery on the island of Bali. *Journal of Hospitality and Tourism Management*, 28, pp.11–19. [Online]. Available at: doi:10.1016/j.jhtm.2016.04.007.
12. Hosteltur. (2020). *Booking destruye puentes con los hoteles en la crisis del coronavirus / Hoteles y Alojamientos*. [Online]. Available at: [https://www.hosteltur.com/135447\\_booking-destruye-puentes-con-los-hoteles-en-la-crisis-del-coronavirus.html](https://www.hosteltur.com/135447_booking-destruye-puentes-con-los-hoteles-en-la-crisis-del-coronavirus.html) [Accessed 27 March 2020].
13. IATA. (2020). *COVID-19 Updated impact assessment of the novel Coronavirus*. [Online]. Available at: <http://travelbi.turismodeportugal.pt/pt-pt/Paginas/IATA-impacto-inicial-da-pandemia-Covid-19.aspx> [Accessed 25 March 2020].
14. Matt, C., Linda, L., Mihir, M. and Matt, W. (2020). *Coronavirus' business impact: Evolving perspective / McKinsey*. [Online]. Available at: <https://www.mckinsey.com/business-functions/risk/our-insights/covid-19-implications-for-business> [Accessed 25 March 2020].
15. RNT. (2020). *Registo Nacional de Turismo - Consulta ao registo*. [Online]. Available at: <https://rnt.turismodeportugal.pt/RNT/ConsultaRegisto.aspx> [Accessed 17 May 2020].
16. Secretaria Regional de Turismo e Cultura. (2020a). *Apoio à Linha de Emergência no sector da Cultura*. [Online]. Available at: <https://www.madeira.gov.pt/srtc/GovernoRegional/OGoverno/Secretarias/Structure/SRTC/ctl/Read/mid/6983/InformacaoId/55024/UnidadeOrganicaId/28> [Accessed 6 May 2020].
17. Secretaria Regional de Turismo e Cultura. (2020c). *COVID Safe Tourism*. [Online]. Available at: <https://www.madeira.gov.pt/srtc/GovernoRegional/OGoverno/Secretarias/Structure/SRTC/ctl/Read/mid/6983/InformacaoId/55206/UnidadeOrganicaId/28> [Accessed 6 May 2020].
18. Secretaria Regional de Turismo e Cultura. (2020b). *Eduardo Jesus e a nova certificação: 'A grande prioridade do momento é vencer o medo de viajar e recuperar a confiança do viajante'*. [Online]. Available at: <https://www.madeira.gov.pt/srtc/GovernoRegional/OGoverno/Secretarias/Structure/SRTC/ctl/Read/mid/6983/InformacaoId/55119/UnidadeOrganicaId/28> [Accessed 6 May 2020].
19. Travel BI. (2019). *Statistics / Guests 2010-2019*. [Online]. Available at: <http://travelbi.turismodeportugal.pt/en-us/Pages/PowerBI/guests.aspx> [Accessed 6 April 2020].
20. Travel BI. (2020). *Estatísticas / Hóspedes 2010-2020*. [Online]. Available at: <http://travelbi.turismodeportugal.pt/pt-pt/Paginas/PowerBI/hospedes.aspx> [Accessed 8 March 2021].
21. Turismo de Portugal. (2020a). *Medidas de Apoio à Economia*. [Online]. Available at: <http://business.turismodeportugal.pt/pt/Gerir/covid-19/Paginas/medidas-de-apoio-economia.aspx> [Accessed 6 May 2020].
22. Turismo de Portugal. (2020c). *Selo "Estabelecimento Clean & Safe" para as empresas do Turismo*. [Online]. Available at: <http://business.turismodeportugal.pt/pt/Gerir/reconhecimento-externo/premios-distincoes/Paginas/selo-estabelecimento-clean-safe-turismo-de-portugal.aspx> [Accessed 6 May 2020].
23. World Health Organization. (2021). *WHO Coronavirus (COVID-19) Dashboard*. [Online]. Available at: <https://covid19.who.int> [Accessed 7 March 2021].

## THE POSSIBILITIES OF REFORMING TOURIST BOARDS INTO NEW DESTINATION MANAGEMENT ORGANIZATIONS

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### ABSTRACT

*Due to numerous economic crises, the competition has intensified and new trends, which dictate the structure of tourism management, have emerged. This indicates the need to find new methods on how to organize territorial units. One of the possibilities is to create destination management organizations (DMOs). They represent the latest concept of organized destination management and involve all stakeholders at the level of both public and private sector. The aim of this paper is to present the possibilities and ideas on merging the existing tourist boards into new destination management organizations. The Republic of Croatia divides its territory into counties and each of these counties has a large number of tourist boards. Zadar County (one of the leading tourist counties in the Republic of Croatia) has been chosen as an example and we have presented the reorganization possibilities in order to achieve market advantages through marketing leadership and the ability to create partnerships with local businesses, services and public sector agencies. An in-depth interview was conducted with the director of the County Tourist Board. This enabled us to gain a better insight into the organizational management structure of the county and we found out more about further organization plans. The purpose of this paper is to present the characteristics, operations and increased market competitiveness, in relation to other tourist areas, which would be created by applying the DMO model. This paper suggests that each DMO can have a unique strategic aim, a different process in developing specific forms of tourism and implemented projects, which would lead to larger competitiveness and a better market recognition. DMOs can mutually form competitive units that could through synergic actions, offer a unique experience to the tourists during their stay in the county.*

**Keywords:** *competitiveness, destination management organization, Republic of Croatia, tourist board, Zadar County*

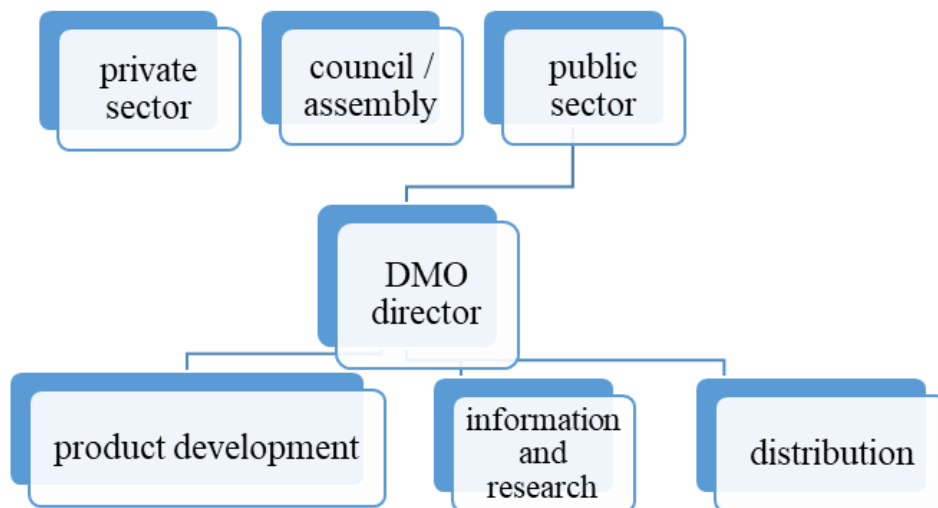
### 1. INTRODUCTION

The change in consumer characteristics and the reduced tourist demand caused by the global pandemic of the COVID-19 virus has increased the competition between the tourist product offer and the tourist destinations' total offer. There are studies, which indicate the need to develop destination management plans in order to improve its performance during the crisis (Prayag, 2020). A stronger destination positioning in tourism market requires a synergistic action of all stakeholders, which would nonetheless be able to recognise their "main authority" at the level of the tourist destination. This "main authority" must have the support of all the stakeholders from both private and public sectors that form the destination management. One of the possibilities to achieve competitiveness is to adopt new tourism models of the destination management organization. Today, the organizational framework operates through tourist boards and in the future, it should operate through a destination management organization

(DMO). Although the success of a tourist destination does not necessarily coincide with the success of a DMO, they are closely related to each other (Pechlane, Volgger, 2014). Historically, the DMO was considered a destination marketing organization. Over time, it has been recognized that the role of DMO goes beyond marketing and includes other activities important for the success of tourism in the destination as well as competitive and sustainable perspectives (Presenza, Sheehan, 2005). DMOs are destination organizational structures that perform certain functions, whether they are responsible and supported by the bidder of the destination or are legally prescribed (Magaš, 2008). They manage the overall area (planning, organizing, leading and controlling) and take actions in order to achieve the defined goals.

## 2. ORGANIZATIONAL STRUCTURE OF DESTINATION MANAGEMENT ORGANIZATION

The structure of the DMO enables significant market advantages such as marketing leadership and the ability to create partnerships with local businesses, services and public sector agencies. DMO members can include hospitality-related entities, such as hotels, restaurants, tour operators, government bodies and any individual or company that directly or indirectly supports tourism. Potential DMO members can also be attraction parks, petrol stations, retail outlets, city authorities, transportation companies, airlines as well as universities (Blain, Brent, Levy, 2005). The correlation of all the DMO actors and the benefits of action is presented in the scheme below.



*Figure 1: Enabling the system of tourist boards to operate according to the model of destination management organization (DMO)*

*(Source: Horwath Consulting, 2008)*

Product development includes:

- Competitiveness
- Merging the elements of supply and product
- Events
- Call for European Union projects proposals

Information and research include:

- Promotional materials
- Maintenance of the destination website
- Monitoring the work of tourist information centres

Distribution is characterized by:

- Sending tourist traffic data to the regional tourist organization (RMO)
- The preparation of marketing material regarding the destination and sending it to the final design and multiplication in the RMO. (Horwath Consulting, 2008)

DMO implies coordination of tourist products. The product is all that can be offered in the market to induce supply, use or consumption (Amstrong, 2008). It is necessary to create a product that will best suit the needs of tourist destination, ie an integral destination product that represents the sum of partial tourist products. Each functional tourist unit forms a part of the tourist product in a complete tourist destination product, often just mechanically connected to the destination unit. In order to create an integral tourist product, the following steps are important:

- To devise concepts of individual tourist attractions arrangement
- To devise concepts of networking the entire tourist destination
- Accommodation capacity
- Catering services
- Rising tourist attractions to the level of market readiness

All the participants in the interrelated network system that creates this product should follow the thread, or the guiding principle. The guiding principle is a written description of the current and desirable state of the company, locality, region or organization (Magaš, 1997). It is achieved by merging stakeholders, as their common interests lie in planning, developing, managing and promoting a recognizable tourist destination and in the creation of complete tourist products to satisfy tourists and the well-being of the whole community.

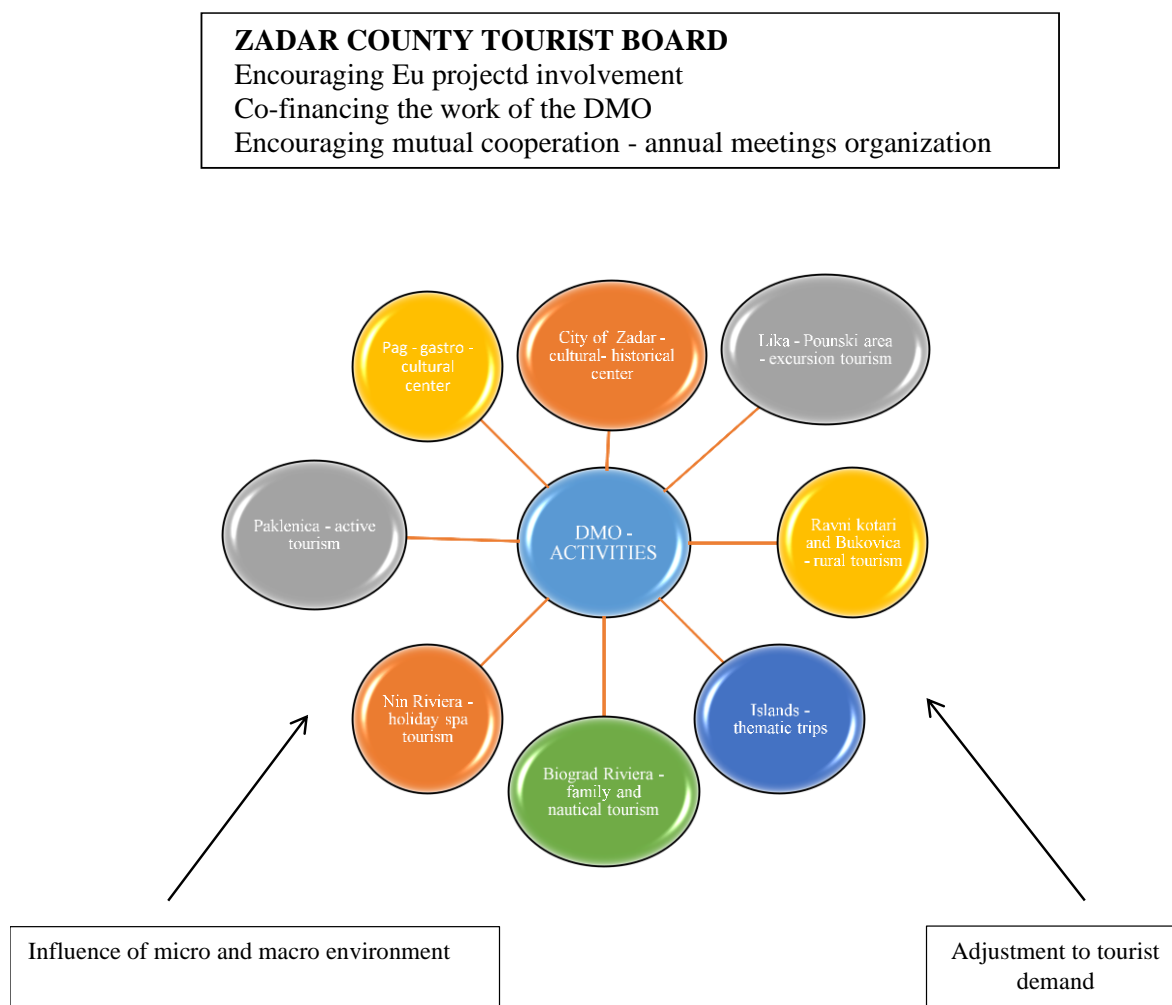
### **2.1. Possibility of organizing a DMO in Zadar County**

Zadar County was chosen as an example of the reorganization of tourist offices into destination management organizations. It is one of the most popular tourist counties in the Republic of Croatia. It is located in the central part of the Adriatic coast. Territorially, it includes the coast and islands of northern Dalmatia, the area of Ravni kotari, Bukovica, part of the Lika-Krbava area with Pounje and the Velebit channel. The county is a hub that connects the northern and southern Croatian coast and Dalmatia with other parts of Croatia. The county has a foundation for the development of different types of tourism, which follows the changing tourist trends. In order to gain the most successful insight into the organizational structure, an in-depth interview was conducted with the director of the county tourist destination. The following questions were raised:

- 1) Is the development of DMO applicable to Croatian tourism?
- 2) Is the development of DMO acceptable in the concept of Zadar County development?
- 3) How many DMOs do you think would be optimal in the County?
- 4) What are the main criteria in determining the area of newly formed DMOs?
- 5) What features should each DMO in the county have?
- 6) What competitive advantages will emerge in relation to tourist boards?
- 7) What is the development strategy required for each of the DMOs?
- 8) What could be the main projects and plans within the DMO?
- 9) During what period do you think that there will be more associations of tourist boards?

All the answers obtained can be summarized. Theoretically, the emergence of DMO is possible, but in practice, it is not easily feasible. This is due to insufficiently developed legislation. At lower organizational levels within the destination, the unification of local mayors is the most important.

It is important that the government succeed in establishing consultations with private entities. Currently, one of the problems faced by tourist boards at the local and county level is the lack of knowledge of people regarding the tasks and capabilities of each of the individual organizational levels. Tourist boards should often organize meetings with local - communal society, representatives of accommodation facilities and tourist destination agencies in order to make a decision on interconnected communication, brochure printing, and website layout. The most important criterion in the organization and in formation of DMO is the geographical unit. Another important criterion is the possibility to organize certain similar tourist activities in this area. It is important to establish cooperation of local tourist boards of a certain area from which it would be possible to develop DMO. Their link would be joint tourism activities that would be different from tourism activities of other DMOs within the county. The development of the main competitive advantage that results from this is the formation of a clearer vision of the experiential aspect that is easier to present to the guest as recognizable. There are greater cost savings by printing joint promotional material and managing joint presentation in markets. The great benefit of DMO operation is achieved by its presentation in well-known international markets. Through monitoring of the EU projects, the county can coordinate and encourage tourist boards to apply for EU projects in order to obtain funding and opportunities for further development. It is important to maintain education and direct tourist boards to cooperate. The beginning of the merger is certainly current aspiration to unite according the activities through creation of common identity in logos and common photographs.



*Figure 2: Recognizable DMO activities in Zadar County*  
 (Source: Authors)

The picture shows the most recognizable specific form of tourism in each of the destination management organizations in Zadar County. Each of these DMOs is affected by the micro and macro natural environment and trends in tourism demand in the markets. In order to grow, develop and further improve each of these DMOs, Zadar County Tourist Board should act with its own activities. The most significant incentive activities should be:

- encourage involvement in the EU projects
- co-financing the work of the DMO with its own budget
- encourage cooperation through organization of annual meetings on the topic of creating competitive tourism advantages with different prosperities.

The area of Zadar County is locally redistributed to eight DMOs. Each of them differs in geographical and local characteristics and plans for the future progress and development. Mutual DMOs are competitive units that, through synergistic action, can provide tourists with a unique experience of staying in the county.

### **3. MUTUAL ASSOCIATIONS OF TOURISM OFFER STAKEHOLDERS**

Representatives of all relevant stakeholders from the county need to be involved in the creation of a destination management organization. Engaging stakeholders in the development of competitive destination is still a significant challenge for academics and for destinations managers (Lucia, Trunfio, 2018). Cooperation of local mayors, administration and self-government, directors of tourist boards and all other tourist stakeholders at the newly created organizational region is important. The main determinant in the annexation of local tourist boards is the regional development geographical unit. The main idea in this decision on merger are the possibilities to develop the same specific forms of tourism and the development of the specific ones in the chosen region – thus enabling the differentiation between DMOs. They would be characterized as regionally-geographically recognizable units, which connect natural and geographical features such as the relation between land and sea or cultural and historical heritage. The joint action of the DMOs consists of competing units that can provide tourists with a unique experience of staying in the county through synergistic action. In this way, a defined picture of the experiential aspect is obtained, which is presented to the guest through a unique promotional presentation, and the main goal is to create a more competitive structure that follows current tourism trends and meets current tourism needs in a better way. It is possible to expect the development of destination management companies that will define further development of tourism. The development of digital collaborative platforms is expected to serve the organization of DMO management from the perspective of destination tourism stakeholders and tourists (Abidin, Lundberg, Scarles, 2019). This process strives to provide a personalized experience. Applying an advanced technology, a DMO can gather useful information to make decisions and take measures to protect and / or increase the competitiveness of a destination (Boner, Franzoni, 2019). In the world of digitization, in addition to advanced technology, it is possible to use both theoretical and managerial implications for destination management.

### **4. CONCLUSION**

In the past, the destination management organizations (DMO) had only the role in marketing. Today, these organizations engage in planning, organizing, managing and controlling tourist destinations and take actions in order to achieve the defined objectives. They represent the latest concept of organized destination management and involve all stakeholders at the public and private sector level who are starting to act as partners. They will replace tourist boards in the future. Zadar County was chosen as an example for the reorganization of the county organizational structure.

There are 31 tourist boards of the city, town and municipality in the county. An in-depth interview with the director of the Zadar County Tourist Board, gave us some answers on the possibility of developing DMOs in the county, their restructuring based on territorial division and the implementation of possible activities in each area. In this county area, tourist boards should be reorganized into 8 mutually connected DMOs. The task of the Zadar County Tourist Board would be to monitor, coordinate and mutually encourage the joint action of all representatives of the Zadar County DMOs. Each DMO can be unique in terms of strategic goal, the development of specific forms of tourism and implemented projects, which would enable larger competitiveness and better market recognition. New types of DMOs based on online destination management platforms are expected to emerge in the near future. This elicits the need to research the way destinations operate in the new era of the development of smart technologies.

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#### LITERATURE:

1. Abidin, H. Z., Lundberg, C. and Scarles, C. (2019). Digital Collaboration: A Solution for Destinations. *e – Review of Tourism Research*. Vol. 16, No. 2/3.
2. Armstrong, G. et. al. (2008). *Priniples of Marketing*, Fifth European Edition, Prentice Hall Europe.
3. Blain, C., Brent, J. R. and Levy, S.T. (2005). Destination Branding: Insights and Practices from Destination Management Organizations. *Journal of travel research*. Vol. 43 No. 4, pp. 328-338.
4. Della Lucia, M. and Trunfio, M. (2018). Engaging Destination Stakeholders in the Digital Era: The Best Practice of Italian Regional DMOs. *Journal of Hospitality & Tourism Research*, Vol. 43, No. 3, pp. 349-373.
5. Horwath HTL. (2008). *Osposobljavanje sustava turističkih zajednica za djelovanje prema modelu destinacijske menadžment organizacije (DMO)*. Horwath Consulting d.o.o., Zagreb.
6. Magaš, D. (2008). *Destinacijski menadžment – Modeli i tehnike*. Faculty of Tourism and Hospitality Management: Opatija.
7. Magaš, D. (1995). *Turistička putovanja kao ekonomska dobra, Turistički management*. Faculty of Tourism and Hospitality Management: Opatija.
8. Pechlaner, H., Volgger, M. (2014). *Requirements for destination management organizations in destination governance: Understanding DMO success*, Tourism Management, Vol. 41, pp. 64-75.
9. Prayag, G. (2020). Research note time for reset? Covid-19 and tourism resilience. *Tourism Review International*. Vol. 24, No. 2-3, pp. 179-184.
10. Presenza, A., Sheehan, L. (2005). *Towards a model of the roles and activities of destination management organizations*. ResearchGate.

# IS MASS CUSTOMISATION THE PATH FOR SMALL AND MEDIUM ENTREPRISES TO GROW INTERNATIONALLY? CASE STUDY OF THE PORTUGUESE FOOTWEAR INDUSTRY

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## ABSTRACT

*This study intends to understand if mass customisation can be an internationalisation opportunity for small and medium enterprises, considering their specific characteristics. Literature approach and the exploratory investigation indicate how customisation can be an option, but with some constraints, such as the entrepreneur's profiler. Flexibility is the key element joining both small and medium-sized companies and the proposed strategy. As far as technology importance goes, both theoretical and exploratory research suggest different perspectives. Nonetheless, this study considers having an important input in today's status quo of Portuguese footwear companies' technological investments. In terms of internationalisation matters, companies may have some leverage for this strategy when networks and price strategies suggested by authors are considered. As all these features were analysed, customisation can be an internationalisation option for Portuguese companies, although it is recognised there is some time to grow before opting for mass scale. The method chosen for this study is systematic combining, which allowed both theoretical and practical data to grow simultaneously. The investigation went direction/redirection in order to answer its own needs. This method allows adding perspectives (active data) that were not considered at the beginning of the investigation. It allowed it to have a broader view on small and medium sized companies' advantages and disadvantages and how mass customisation could work. The entrepreneurs play a critical role, and grey entrepreneurs appear to be the most significant limitation.*

**Keywords:** *Entrepreneur, Mass customisation, SMEs, SME internationalisation, Portuguese footwear industry*

## 1. INTRODUCTION

When discussing international business, Small and Medium Enterprises (SMEs) play an important role because they represent a vast and significant part of the international market share, and are responsible for billions of products and services every day (Stojanova, Suzic and Orcik, 2012). The present study focuses on small and medium enterprises (SMEs) characteristics to understand if mass customisation is a possible strategy for internationalisation. The investigation's starting point is a common feature between both main concepts, SMEs and mass customisation: flexibility. SMEs have a more flexible structure, a quicker response to new opportunities, informal and autonomous management which helps build a more adaptable response to market needs (Anderson et al., 2014; Love et al., 2015; Stojanova et al., 2012). As an internationalisation opportunity, mass customisation requires such structure. As Pine et al. (1993) and Svensson et al. (2002) suggest, mass customisation is a process of adaptation, constantly changing its settings.



The present paper will, initially, focus on SMEs characteristics literature and its internationalisation, and afterwards, mass customisation. Based on the chosen methodology for this paper, systematic combining, its introduced how the study proceeded and the selected sample. Following this analysis, the results of the exploratory investigation are considered and discussed, ending with the conclusions to the study and answer to the initial question.

## 2. LITERATURE REVIEW

### 2.1. Characteristics of Small and Medium Enterprises

As previously indicated, flexibility is one of the competitive advantages of SMEs, based on unstructured processes and “[...] flat and less bureaucratic than large firms” (Liao et al., 2015, p. 1260), which reflects on a more flexible environment (Singh et al., 2008). Serrasqueiro et al. (2008) agree that SMEs ability to adjust and adapt their structures to new situations and opportunities is a significant advantage compared to larger companies. In terms of planning, SMEs also seem to have a more irregular and “intuitive” manner. “The suggestion that enterprises that plan strategically are more successful than those who do not would entail that – assuming that SMEs reveal a lower degree of formal strategic planning – big companies are more successful than SMEs. However, this seems to be very unlikely.” (Kraus et al., 2005, p. 2/4). According to the authors, formal planning is more applicable to big enterprises which are more bureaucratic “[...] and thus not transferable to the requirements of the fast-moving and flexibly structured SMEs”. Size seems to impact flexibility, because SMEs size does not require much internal complexity; companies are more focused on the external uncertainty and try to adapt their structure external environment’s needs with a flexible structure. So, size can also be seen as a liability because it limits other resources. Finances are considered one of the most significant limitations (Sallem et al., 2017); because SMEs do not have much financial power, the investment in other areas, such as innovation, technology and processes, is scarce. Kozubíková et al. (2017) also noted that SMEs have more difficulties when trying to get the banks to help their investments. Similarly, and due to low levels of financial awareness and knowledge (Kozubíková et al., 2017), the lack of accounting and lack of appropriate record-keeping also conditions SMEs activity. Anderson et al. (2014) believe that by internalizing accounting information, decision-making will, most likely, be more informed, resulting in a more effectively and efficiently management based on insightful resources. Low levels of information technology systems also determine SME performance. Managers (especially senior ones) have some anxious thoughts towards their usage, and so their companies’ technology is obsolete, only working with a traditional method (Singh, Garg and Deshmukh, 2008). This behaviour is conditioned by the expensive investments and high costs in maintenance which generally requires external assistance (Nguyen, 2009, p. 173), claiming it does not add enough value to the business. Entrepreneurship is a highlight in the company’s performance because it usually plays a critical role in the ownership (Loecher, 2000; Man et al., 2002; Pula et al., 2015) and also in business management because they are responsible for all the decisions and activities in the company (Nguyen, 2009). Kozubíková et al. (2017) tried to identify the characteristics of a “good entrepreneur” considering gender, age and personality traits. One of the findings was that older individuals are more averse to risk, aggravated if previous endeavours have failed. As the world population is ageing, the workforce has its own characteristics according to this shift. It is possible to understand the rise of “[...] the [...] *grey entrepreneur* [...] someone over a certain age who starts or operates a small or medium-sized enterprise” (Weber et al., 2004, p. 152). In this study, in many developed countries, SMEs owners in 2002 had an average age between 45 and 54. Thus, the majority of entrepreneurs are old, male and autonomous, less energetic and productive. Their poorer personal health might also affect their business, and they are less likely to have formal educational qualifications which shows less awareness of financial risk (Kozubíková et al., 2017).

Nevertheless, they have higher levels of technical knowledge (industrial and management wise), enlarged personal networks due to formal and informal contacts made through the years and a great extent of experience. Human resources knowledge, experience and skills are vital characteristics for success. Liao et al. (2015) also reflect that employees are flexible resources when surrounded by rich networks to improve their ability to adapt to new or problematic situations. Employees play an essential role in managing operational processes and finding solutions when involved in projects and fully informed, feeling like a responsible and imperative member of change (Nguyen, 2009). Networks are an important characteristic of SMEs. Due to entrepreneur's contacts, SMEs have strong and close relationships within networks which help surpass some previous limitations mentioned. These relationships have direct impact on the company daily activities and technology, knowledge, contacts, products, solutions are shared among members of networks. The need to encourage networks is due to the fact that SMEs are financially limited, and have to cooperate with others stakeholders to have access to important resources: "Network relationships may overcome the problems of limited resources, experiences, and credibility" (Lin et al., 2016, p. 1781). Also, strong relationships, especially with suppliers, enhances companies capacity to be flexible (Pollard et al., 2011).

## **2.2. Small and medium enterprises internationalisation**

When discussing internationalisation, it was decided to consider the relationship between price and networks. The considered characteristics impact in SMEs' internationalisation. Price is a critical issue for international marketing, but also the only international instrument that creates direct revenues. Also, the more accurate companies set their prices, the greater demand will be: "If the price requested was too low, the firm would cede value created to the customer. If the price was too high, then the quantity sold would be too low" (Dutta et al., 2003, p. 626). Along with the importance of price setting, authors highlight the important of quality products, which present a competitive advantage, such as innovation and service advantage. "[...] There is a hierarchy in the market performance outcomes of the achievement of service advantage, price advantage, and—when in balanced combination with service—product advantage in the overseas markets." (Falahat et al., 2020, p. 38). Service advantage is the "[...] intangible elements (activities, processes, and initiatives) developed around physical goods to facilitate their acquisition, delivery, and use" (Kaleka et al., 2017, p. 29). As the authors describe, to win international markets, product, price, and delivery need to be in harmony. Thus, networks can be considered a crucial aspect of allowing products to be delivered quick and seamlessly. SMEs have a solid possibility to work around this relationships due to the fact that SMEs rely on the personal, trustable and strong relations to internationalize (Musteen et al., 2010). As previously mentioned, networks are sturdy characteristics of SMEs activity, permitting access to resources that it would be harder to obtain or build on an international venture. The need to have price/quality, but also to add value with good service is indeed essential. External relationships, such as networks, should be an enhancer to the internationalisation process. Partners within the network are sources of market knowledge and a way of getting their companies known by potential partners and clients.

## **2.3. Mass customization**

Mass customisation is suggested, in this study, as an internationalisation strategy, described by Pine et al. (1993) as a distinct way of doing business. The goal of this investigation is to consider customisation on a large scale, and not like customisation before the industrial revolution: "In mass customisation approach, products are just built after the company has the orders in hand with the exact quantity and quality required" (Pollard et al., 2011, p. 77).

This strategy intends, on a large scale, the integration of consumers in the designing and creation of the product (Stojanova, Suzic and Orcik, 2012). The challenge resides in the value chain because it demands full integration and connection between every intervenient. Thus, there need to be standardized processes that allow delivering customized products (Lampel et al., 1996; Pollard et al., 2011). Companies will need to have integrated informational and productive technology, flexible structures, a robust, responsive and physically close supply chain, skilled human resources and solid communication.

#### **2.4. Conclusions on Literature Review**

Based on the literature review, we can now interpret it into some propositions for the empirical research. Flexibility, the starting point to this investigation, is considered SMEs competitive advantage for mass customisation implementation: companies are flexible, and the strategy requires a structure with that type of response. On the other hand, finances and financial support from institutions seem to be more challenging. Companies do not have the financial means to invest, for example, in information integrated systems. Moreover, as discussed before, investment in technology seems to be very little when analysing the requirements mass customisation demands. In terms of information management and due to the management profile, companies seem to be externalizing that information losing power over it. As the entrepreneur's profile was sketched, the grey entrepreneur profile appeared positive due to the extended contacts, technical knowledge and much experience. But also negative because of the aversion to risk, decision-based on intuition, less energetic and less likely to have formal education. Human resources are both flexible and experienced resources able to answer mass customisation needs. In terms of internationalisation, the mentioned relationship can be an important enhancer for mass customisation implementation. If SMEs use their connections with partners, collaborators, suppliers and clients in order to have a quick and smooth answer to the market, along with distinctive and quality products to gain international competitive advantage. Besides, mass customisation could use this integrated answer, where suppliers, producers and clients are all connected.

### **3. METHODOLOGY**

The method used for this investigation is systematic combining, a non-linear and unusual conceptualisation of scientific investigation (Dubois et al., 2017). With this approach, authors can go back and forth in the investigation, analysing the theoretical data and with the information obtained in the exploratory investigation, allowing a more abductive perspective (Dubois et al., 2002). This research method allows active data, which, for instance, in this investigation corresponds to the profiling of the grey entrepreneur. During the exploratory investigation, a pattern started to surface: all interviews were male, within a certain age, with similar backgrounds. Due to the chosen method, the investigation went back and investigated more on SMEs entrepreneurs' profile. One of the critics of this method is that it is very interpretive and lacks standardised rules usually associated with scientific research (Dubois et al., 2017). To avoid this biased perspective, this investigation took into consideration both qualitative and quantitative data (table 1) obtained in the interviews: not only was it considered the observations to the questioned matters, but also, the number of times they were expressed. To support the theoretical data, the exploratory study considered the Portuguese footwear industry. In Portugal, footwear is a significant industry, but also in international markets, since most of the production is exported. Portugal economy is based on SMEs activity, such as the footwear industry. The sample for this investigation is: small and medium enterprises that supply components (five participants), shoe producers (ten participants) and also clients/intermediaries who have the market knowledge (four participants). The interviewees are owners and/or managers.

The data was obtained from nineteen interviews done during the period of 7<sup>TH</sup> of March 2020 and 2<sup>ND</sup> of June 2020: five are suppliers, four are clients/intermediaries and ten are producers. During this period, the interviews were being transcribed and analysed through NVivo Software, to allow new theoretical data to be considered. All of the interviewed companies are SMEs within the footwear industry (table 2), with national and international activity: all were present internationally through direct and/or indirect exportation. Companies considered in the investigation were managed and/or owned by men, with an average age around 40-60 years old, and none of the companies were new in the business. The interview' script is divided into two parts. The first one concerning SMEs characteristics and internationalisation. The second one regarding mass customisation, to understand if that market approach was possible and was an opportunity for Portuguese companies to internationalize. It is important to understand that the script was semi-structured, due to the chosen method, allowing the investigation and the interview to go back and forth, including aspects and information that was not considered initially.

#### 4. RESULTS AND DISCUSSION

Regarding the results collected, flexibility was confirmed as a critical point of SMEs activity, with none of the interviewees considering it a disadvantage. Also, it was indicated how size affects this feature: because companies are small, they can have more flexible structures, faster responses to market needs. A variation added by interviewees includes the flexibility to plan and execute faster and easier than larger companies. This specific side of flexibility has mostly to do with fast responsiveness, shorter and almost daily planning's, closeness to the European market, flexible structures which allow change of production easily, and a strong and physically close network. As Kraus et al. (2005) and Liao et al. (2015) suggested, the capacity to change productive processes in a less costly and more efficient way is advantageous for SMEs, especially compared to more prominent companies. On finances, interviewees revealed a much divided answer, making it difficult to have a clear understanding of the subjected. Nonetheless, the interviewees were carried out during the pandemic, and answers were about the pandemic's influence on the business. On the other hand, those who supported that finances were not a limitation believe it to be more a management problem, lack of future goals/strategy. Even in terms of bank support, if companies do not have clear and sustainable strategies, it is more challenging. The difficulty to access financial support seem to reside more on newness rather than smallness. While literature reveals a poorly technology investment from SMEs, exploratory research showed otherwise: more than half of the interviewees support a very positive attitude towards informational and productive technology, and also, while visiting some working spaces, it was easy to witness those investments. Information management was also interesting to take into consideration because literature also supports a different perspective from reality. Almost half of the interviewees have internal management (only resorting to external support for technical and authentication reasons), they believe it allows more rigorous, immediate and integrated view on business. The ones who have external help for most information do not believe there is no decision power loss because the relationship with the external company is considered a collaboration. In both perspectives, interviewees agreed that sometimes, due to the small business dimension, it is not necessary to have internal management. Also, they believe that having external support can be very positive because it is considered an "outside the box" perspective, which, in many cases, is very valuable. As active data, the entrepreneur's profile started to be drawn: average age around 48 years old, male, less energetic, low levels of formal education, a lot of technical knowledge and decision-making based on experience. In terms of human resources, interviewees agree they are an essential part of business and flexibly, considering the Portuguese footwear industry is human labour-intense.

When discussing internationalisation for SMEs, the price was suggested important as a first approach but must be supported by a quality product. As Kaleka et al. (2017) suggested, having a quick service and delivery is an relevant internationalisation matter. SMEs can plan and execute fast and through a strong network, have a service advantage. Internationalisation throw networks and its partners has two different sides. An overreliance on partners means depending and trusting a lot on information shared by a partner, relying a lot on the relationship's human side instead of the business side. On the other hand, networks can represent a recommendation and more credibility to new incomers. When discussing mass customisation, supplier's interviewees all believed mass customisation to be not only a possible strategy but also a differentiating one which could lead to better prices and more gains. Also, they supported this answer through online consumerism growing. They also mentioned that this strategy would require producers to increase stocks. As Pollard et al. (2011) suggested, the physical closeness was also considered vital for the strategy to work, since Portuguese companies "have a 24 hours a day warehouse of supplies". The majority of the ones which supported a negative answer for mass customisation to work, indicated the high costs and investments, the need to increase stocks and the possible waste of products (modules) that could result from the strategy. Also, it was suggested how markets and consumers might not be ready for customisation. Some interviewees explained how this strategy may work in a micro-small scale, but not in mass customisation: handcrafted and not in an industrialised business. As Lampel et al. (1996) and Pollard et al. (2011) indicated, mass customisation does not represent handcraft, on the contrary, companies should find standardized processes and productive systems which allow personalization. In order to have this type of production system, participants believe there needs to be some level of product standardization which permits small changes in production system, allowing customisation from a standardized model (modular proposition which seems to be possible in the footwear industry since there are many options to be added – accessories, for instance – in a basic shoe which could be pre-done). Also, mass customisation was not denied because it was an impossible strategy, but because interviewees believed it not to be a personal choice. This can be related to entrepreneur's fear of risk and the lack of energy of grey entrepreneurs to take on new opportunities. The numbers also support this idea; when asked if customisation from a 'basic model' was possible, only 21% said no and 58% said it to be possible.

## **5. CONCLUSION**

This study approached SMEs firstly in order to understand if mass customisation could be an opportunity for internationalisation. Based on the theoretical study and the exploratory investigation there are some challenges and some chances. Flexibility (considering size and planning and executing flexibility), technology and human resources are very positive features of SMEs to mass customisation implementation. In terms of information management, although two perspectives were considered, both seem positive and not an obstacle for SMEs activity: each has advantages and disadvantages, and the latter is not a barrier, impeding SMEs to grow and progress. In terms of finances, more questions can arise since the exploratory research showed many balanced results. As it was suggested, finances may depend a lot on companies plan for the future, their strategy and goals – management decision-making. Moreover, as the entrepreneur role was more explored, a pattern was found which may be the most significant limitation for mass customisation since to its implementation there are some risks, which managers are not willing to take. In terms of SMEs internationalisation, mass customisation can be a possible opportunity. SMEs which can join price, product and service advantage have better leverage to enter markets. Since networks are a fundamental part of SMEs daily activity, service advantage can be reached through those relationships.

Mass customisation is an example of a strategy that requires a good quality product, where price may even become secondary, but where quick response is essential. Thus, as a result, SMEs seem to have an advantage when comparing to other sized companies. Mass customisation mainly was supported with modular parts: build-to-order from scratch seems to be a more complex and severe challenge for SMEs. Thus, to answer the initial question to this study, SMEs have an opportunity in the customisation world, but regarding the large scale, that seems to be more challenging for now. A path is being walked at this moment with the change of consumers buying habits, where online shopping is growing and proving to be a solid option. For Portuguese SMEs, this can be a small part of their business for now, and as consumers are also given this opportunity, it could lead to what this study suggests: customisation of goods on a large scale. When customisation in the footwear industry becomes a more natural and regular offer to consumers, Portuguese SMEs can take advantage of offering good quality shoes, at reasonable prices in short lead times. As the investigation grew, it was possible to identify some limitations and future suggestions for investigators. As the study suggested, the considered companies are already mature companies with mature management: if younger companies were considered, a different and broader outcome could be obtained. There was also a clear geographical pattern: most companies considered are from a single footwear cluster. As a suggestion for future investigation, it could be interesting to do a comparative study with a different industry to understand the differences in terms of technology and management, for instance, and its impacts on mass customisation.

## LITERATURE:

1. Anderson, A. R. and Ullah, F. (2014) 'The condition of smallness: How what it means to be small deters firms from getting bigger', *Management Decision*, 52(2), pp. 326–349. doi: 10.1108/MD-10-2012-0734.
2. Dubois, A. and Gadde, L.-E. (2017) "“Systematic Combining”: An approach to case research', *Journal of Global Scholars of Marketing Science*. Routledge, 27(4), pp. 258–269. doi: 10.1080/21639159.2017.1360145.
3. Dubois, A. and Gadde, L. E. (2002) 'Systematic combining: An abductive approach to case research', *Journal of Business Research*, 55(7), pp. 553–560. doi: 10.1016/S0148-2963(00)00195-8.
4. Dutta, S., Zbaracki, M. J. and Bergen, M. (2003) 'Pricing process as a capability: A resource-based perspective', *Strategic Management Journal*, 24(7), pp. 615–630. doi: 10.1002/smj.323.
5. Falahat, M. *et al.* (2020) 'SMEs internationalization: The role of product innovation, market intelligence, pricing and marketing communication capabilities as drivers of SMEs' international performance', *Technological Forecasting and Social Change*. Elsevier, 152(November 2019), p. 119908. doi: 10.1016/j.techfore.2020.119908.
6. Kaleka, A. and Morgan, N. A. (2017) 'Which competitive advantage (s)? Competitive advantage-market performance relationships in international markets', *Journal of International Marketing*, 25(4), pp. 25–49. doi: 10.1509/jim.16.0058.
7. Kozubíková, L. *et al.* (2017) 'Important characteristics of an entrepreneur in relation to risk taking: Czech Republic case study', *Journal of International Studies*, 10(3), pp. 220–233. doi: 10.14254/2071-8330.2017/10-3/16.
8. Kraus, S., Reiche, B. S. and Reschke, C. H. (2005) 'The role of strategic planning in SMEs: Literature review and implications', *Conference proceedings of the Annual Meeting of the British Academy of Management, Oxford, UK*, (May), pp. 1–21.
9. Lampel, J. and Mintzberg, H. (1996) 'Customizing Customization', *Sloan management review*, 38(1), pp. 21–30.

10. Liao, Y. and Barnes, J. (2015) 'Knowledge acquisition and product innovation flexibility in SMEs', *Business Process Management Journal*, 21(6), pp. 1257–1278. doi: 10.1108/BPMJ-05-2014-0039.
11. Lin, F. J. and Lin, Y. H. (2016) 'The effect of network relationship on the performance of SMEs', *Journal of Business Research*. Elsevier Inc., 69(5), pp. 1780–1784. doi: 10.1016/j.jbusres.2015.10.055.
12. Loecher, U. (2000) 'Small and enterprises ± delimitation and the European definition in the area of industrial business', 12(5), pp. 261–264. Available at: <https://doi.org/10.1108/09555340010373537>.
13. Love, J. H. and Roper, S. (2015) 'SME innovation, exporting and growth: A review of existing evidence', *International Small Business Journal: Researching Entrepreneurship*, 33(1), pp. 28–48. doi: 10.1177/0266242614550190.
14. Man, T. W. Y., Lau, T. and Chan, K. F. (2002) 'The competitiveness of small and medium enterprises: A conceptualization with focus on entrepreneurial competencies', *Journal of Business Venturing*, 17(2), pp. 123–142. doi: 10.1016/S0883-9026(00)00058-6.
15. Musteen, M., Francis, J. and Datta, D. K. (2010) 'The influence of international networks on internationalization speed and performance: A study of Czech SMEs', *Journal of World Business*. Elsevier Inc., 45(3), pp. 197–205. doi: 10.1016/j.jwb.2009.12.003.
16. Nguyen, T. U. H. (2009) 'Information technology adoption in SMEs: An integrated framework', *International Journal of Entrepreneurial Behaviour and Research*, 15(2), pp. 162–186. doi: 10.1108/13552550910944566.
17. Pine II, B. and Victor, B. (1993) 'Making mass customization work', *Harvard business review*, 71(5), pp. 108–117.
18. Pollard, D., Chuo, S. and Lee, B. (2011) 'Strategies For Mass Customization', *Journal of Business & Economics Research (JBER)*, 6(7), pp. 77–86. doi: 10.19030/jber.v6i7.2447.
19. Pula, J. S. and Berisha, G. (2015) 'Defining Small and Medium Enterprises : a critical review', *Academic Journal of Business, Administration, Law and Social Science*, 1(1), pp. 16–28. doi: ISSN 2410-3918.
20. Sallem, N. R. M. *et al.* (2017) 'Small and Medium Enterprises: Critical Problems and Possible Solutions', *International Business Management*, 11(1), pp. 47–52. doi: 10.3923/ibm.2017.47.52.
21. Serrasqueiro, Z. S. and MaçÃs Nunes, P. (2008) 'Performance and size: Empirical evidence from Portuguese SMEs', *Small Business Economics*, 31(2), pp. 195–217. doi: 10.1007/s11187-007-9092-8.
22. Singh, R. K., Garg, S. K. and Deshmukh, S. G. (2008) 'Strategy development by SMEs for competitiveness: A review', *Benchmarking: An International Journal*, 15(5), pp. 525–547. doi: 10.1108/14635770810903132.
23. Stojanova, T., Suzic, N. and Orcik, A. (2012) 'Implementation of Mass Customization Tools in Small and Medium Enterprises', *International Journal of Industrial Engineering and Management*, 3(4), pp. 253–260.
24. Svensson, C. and Barfod, A. (2002) 'Limits and opportunities in mass customization for "build to order" SMEs', *Computers in Industry*, 49(1), pp. 77–89. doi: 10.1016/S0166-3615(02)00060-X.
25. WEBER, P. and SCHAPER, M. (2004) 'Understanding the Grey Entrepreneur', *Journal of Enterprising Culture*, 12(02), pp. 147–164. doi: 10.1142/s0218495804000087.

## APPENDIX

*Table 1: Quantification of the answers*

Answers			No opinion shared on the matter
<b>Flexibility</b>	<b>Positive aspect: 17</b>	<b>Negative aspect: 0</b>	2
<b>Flexible Planning and Executing</b>	<b>Positive aspect: 14</b>	<b>Negative aspect: 0</b>	5
<b>Finances</b>	<b>Limitation: 9</b>	<b>No limitation: 7</b>	<b>Null (neither an advantage nor a disadvantage)</b> 3
<b>Technology</b>	<b>Positive aspect: 13</b>	<b>Negative aspect: 4</b>	2
<b>Information Management</b>	<b>Internal Management</b> 9	<b>External Management</b> 7	3
<b>Entrepreneur experience</b>	<b>Central: 6</b>	<b>Other aspects considered: 10</b>	3
<b>Human Resources</b>	<b>Positive aspect: 15</b>	<b>Negative aspect: 0</b>	4
<b>Networks for internationalization</b>	<b>Positive aspect: 10</b>	<b>Negative aspect: 4</b>	5
<b>Price</b>	<b>Central: 9</b>	<b>Other aspects: 8</b>	2
<b>Mass Customization</b>	<b>Possible: 4</b>	<b>Not possible: 15</b>	0
<b>Mass Customization for microenterprises or subsector of SMEs</b>	<b>Mentioned</b>  14	<b>Not mentioned</b>  5	
<b>Levels of customization “allowing the consumer to customize from a basic model”</b>	<b>Possible</b> 9+2 (referred as same from scratch)	<b>Not Possible</b> 4	4

*Source: Authors*



*Table 2: Interviewees ID*

<b>Enterprise Name</b>	<b>Interviewee Name</b>	<b>Interview Age</b>	<b>Role in the company</b>	<b>Supplier Footwear Producer Client/Intermediary</b>
<b>Apple of Eden</b>	Nélson Gomes	42 years old	Manager and Owner	Client/Intermediary
<b>ASM - Indústria e Comércio Internacional, S.A</b>	Fernando Martins	58 years old	Manager and Owner	Supplier
<b>ATSO – Unipessoal Lda.</b>	António Trindade	56 years old	Manager, Owner and Commercial Director	Client/Intermediary
<b>Bolflex - – A. Ferreira e Pereira, Lda.</b>	António Ferreira	56 years old	Manager and Owner	Supplier
<b>Brasa Fábrica de Calçado, Lda.</b>	Luís Macedo	52 years old	Manager and Owner	Footwear Producer
<b>Cramarinhos - Fábrica de Calçado Lda.</b>	Abel Monteiro	53 years old	Manager and Owner	Footwear Producer
<b>Pintos e Soares S.A.</b>	Daniel Pinto	41 years old	Manager and Owner	Footwear Producer
<b>Fábrica de Calçado DURA, Lda.</b>	Agostinho Marques	60 years old	Manager and Owner	Footwear Producer
<b>Euroflex - Componentes para Calçado, Lda.</b>	Mauro Vaz	31 years old	Manager and Commercial director	Supplier
<b>Felgui – Indústria e Comércio de Calçado, Lda.</b>	Ilídio Ferreira	55 years old	Manager and Owner	Footwear producer
<b>Marina, Calçados S.A</b>	Mauro Costa	53 years old	Manager, Owner and Commercial Director	Footwear producer
<b>Wortmann</b>	Matthias Tilleke	38 years old	Manager of local sourcing	Client/Intermediary
<b>Mazoni – Indústria de Calçado S.A</b>	Fernando Sampaio	65 years old	Manager and Owner	Footwear producer
<b>Pinho Gomes e Pinho, Lda.</b>	Sérgio Miguel	42 years old	Commercial Director	Supplier
<b>Rilix - Indústria de Calçado Lda.</b>	Luís Mendes	55 years old	Manager and Owner	Footwear producer
<b>Calçado Samba S.A</b>	Rui Oliveira	36 years old	Commercial Director and Manager	Footwear producer
<b>VAPSOL – Fábrica de componentes para Calçado, Lda.</b>	Décio Pereira	31 years old	Manager, Owner and Commercial Director	Supplier
<b>Company A</b>	Mr. X	48 years old	Manager	Footwear producer
<b>Company B</b>	Mr. Y	60 years old	Production manager and quality control	Client/Intermediary

*Source: Authors*

## SUSTAINABILITY DIMENSIONS ASSESSMENT: AN ESSAY FOR DOURO REGION VITICULTURE

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### ABSTRACT

*Social concerns about the impact of agricultural production on public health and environment parameters and the requirements for farm cost-effectiveness make the sustainability assessment as a fundamental tool for the decision making. This study provides a comparative analysis of the triple bottom line of the sustainability for the three Douro sub-regions following an adaptation of the Framework for the Evaluation of Natural Resource Management Systems Incorporating Sustainability Indicators (MESMIS). Data were collected from Douro wine-farms through 110 face-to-face inquiries distributed by Baixo Corgo, Cima Corgo and Douro Superior sub-regions. The work aims to establish which sub-region are the most sustainable in each economic, environmental and social dimensions, identifying the indicators which best contribute to its sustainability as well as the more unfavourable indicators where improvements can be made. Analysis of the findings leads to confirm an empirical trend of the conflict between the economic and environmental dimensions. Through the evaluation of the relationship between the same indicators per sub-region of Douro and considering the average value from Douro as the reference, we found that Cima Corgo and Baixo Corgo are the most profitable and dominates the economic indicators. Cima Corgo is superior on social dimension too. Douro Superior has a weaker structure than the others, but expresses the most favourable environmental aspects, with low chemical costs and also the managers of their farms have lower literacy levels. The sub-region with the best values that balance the various dimensions of sustainability in its farms can guide sustainable solutions to be adopted for the viticulture systems in mountainous contexts.*

**Keywords:** Douro sub-regions, MESMIS, sustainability indicators, wine sector

### 1. INTRODUCTION

In Portugal, wine production has a great tradition particularly in the Douro Demarcated Region (DDR), the first viticulturist region delimited and regulated worldwide (1756) (Magalhães, 2012). DDR extending over a total area of 250.000 ha, of which 44.162 ha are currently occupied with vines predominantly located in steep-slope landscapes (IVV, 2021). Due to their heterogeneity, as regards the land structure, orography and climate, three main sub-regions have been defined: Cima Corgo, Baixo Corgo and Douro Superior, whose production systems may have differentiated sustainability behaviours. Due to their historical relevance, grape and wine production has a high influence in the economic, social and environmental dynamics. So, the sustainable development targets are of extremely importance and a compromise of the three dimensions is required for ensure a balanced productive system (Christ and Burritt, 2013). According several authors (Masera et al., 2000; Marta-Costa, 2010), the sustainable farming system definition is centred on productivity, stability, resilience, reliability, adaptability, equity and self-reliance, comprised in the link between economic, social and environmental

dimensions. Obviously, economic dimension, plays an important role due to their influence on activity's survival and in continuity of the farmers' in rural areas, which is essential for protecting the environment and preserving both the landscape and its natural resources (Masera et al., 2000; CEC, 2001; Fernandes and Woodhouse, 2008; Marta-Costa et al., 2012). Due to the great variability and interdependency of the several attributes and indicators of sustainability, the sustainability assessment needs to be made with very cautiousness and always considering the several criteria structured in the three mentioned dimensions (De Olde et al., 2016). Publication of studies on sustainability and environmental performance in grape organizations has increased substantially in recent years (e.g. Annunziata and Zanni, 2018; Flores, 2018; Gilinsky et al., 2016; Merli et al., 2018; Santiago-Brown et al., 2015; Varsei and Polyakovskiy, 2017; Zambon et al., 2018). However, the heterogeneity of the methodologies used are evident due to the complexity and lack of consensus around the sustainability concept and also due to the multifunctionality of the agriculture. The scales to adopt, the indicators selection, the linkages and the integration of indicators, and the application of the results in the systems are the main problems cited by Marta-Costa and Silva (2013), Binder and Wiek (2007) to assess the sustainability on the farming systems. This paper aims to establish which Douro sub-region (Baixo Corgo, Cima Corgo or Douro Superior) are the most economic, environmental and social sustainable and also identify which indicators that best contribute to that sustainability, as well as the most unfavourable indicators where improvements can be made.

## 2. METHODS AND SOURCES

In this work we start from the conception of Masera et al. (2010) that sustainability cannot be evaluated per se, but only comparatively or relatively. The Framework for the Evaluation of Natural Resource Management Systems Incorporating Sustainability Indicators (MESMIS), with adaptations for the conditions of RDD viticulture, was the methodology selected. MESMIS was chosen because is applicable on farming systems and allows an overview of the holistically points out their limits and possibilities of sustainability by the intersection of environmental processes and socio-economic conditions (Masera et al., 2010). It compares the management systems (in this case Douro average), either by contrast to one or more reference (in this case Cima Corgo, Baixo Corgo and Douro Superior). It has a flexible structure so that it can be adapted to different levels of information and technical skills that are available locally, whose outputs allow to find the critical points of sustainability and to modify the management systems (Masera et al., 2010). The used data has been collected from Douro region, through face-to-face surveys of 110 vineyard grape growers, of which 49 from Cima Corgo sub-region, 39 from Baixo Corgo sub-region and 22 from Douro Superior sub-region. The methodological framework of survey was applied according to Hill and Hill (2008). For sample selection, two rural municipalities of each subregion were chosen, based on their larger representativeness regarding their total vineyard area. In order to ensure the diversity and heterogeneity of the sample the number of grape growers assembled to each municipality were distributed into four vineyard class areas: a)  $1 \leq \text{area} < 5$ ; b)  $5 \leq \text{area} < 10$ ; c)  $10 \leq \text{area} < 15$  and d)  $\geq 20$  ha. The survey was structured in the following six sections: (1) identification of the farm and the surveyed; (2) general characterisation of the entrepreneur; (3) overall characterisation of the farm and its fixed capital; (4) characterisation of the vineyard and its outputs; (5) production costs per wine-growing operation; (6) supplementary information. Subsequently, the information obtained through the surveys was appreciated and validated by the various parties involved in the enquiry process through the application, in 2019, of the World Café methodology. To evaluate and compare the sustainability assessment at sub-region level the following steps were realized: (1) selection of environmental, social and economic indicators reflecting the critical points of the Douro wine system and on an equitable basis (Table 1).

They were defined according to the main attributes of sustainability of productivity; stability; resilience; reliability; adaptability; equity and self-reliance (Masera *et al.*, 2010); (2) measurement of the indicators for each farm of the three sub-regions; (3) standardisation and comparative assessment of each indicator of each sub-region with the reference system (Douro average, index 100); (4) integration of the figures obtained into economic, environmental and social indices and then into an overall sustainability index.

### 3. THEORETICAL FRAMEWORK AND OPERATIONAL CONCEPTS

Sustainability may be generally defined as using business practices that are environmentally friendly, socially equitable in terms of treating employee and community fairly, and economically viable (Gilinsky *et al.*, 2016). Specifically, in the agronomic area, namely in the wine sector this definition has many descriptions that allow to an ambiguity of the concept (Warner, 2007). This is the result of the complexity of the sector, which comes not only from its natural conditions and the mode of production that is adopted (organic, biodynamic, integrated, conventional), but also involves the landscape, culture, history and the immaterial features (Bordiga, 2016, Merli, *et al.*, 2018). The sustainability concept is based on the triple bottom line concept (environment-economy-society) where the economic performance is directly related alongside the environmental and social impacts (e.g. Marta-Costa, 2010; Christ and Burritt, 2013; Vecchio, 2014). However, most of the sustainability programs and studies are essentially linked on the environmental pillar of sustainability. Based on a review of 133 articles related with the terms “sustainable”, “sustainability” and “land use”, Gibbes *et al.* (2020) conclude that almost half of them are focused on one dimension (environmental), one-fifth in two dimensions, and the lasting third in all three dimensions of sustainability. But not only are the dimensions of sustainability important, the measurable ways selected to make them operational plays a relevant role for an effective and robust sustainability assessment. Their choice must ensure globally applicability, realism, cost-effectiveness, comparability and comprehension (Hayati, 2017). Usually, for the sustainability assessment, the environmental dimension is measured by the indicators related to the product quality, soil and organic matter, waste, wise use of resources, quantity of agrochemicals and water management. The production, productivity, income, value added and employment, among others, express the economic perspective. Finally, related to the social dimension, there are selected the educational level, equity, training, cooperation and associative participation (Rezaei- Moghaddam and Karami, 2008; Gaviglio *et al.*, 2017). Mainly in the last years, there is an increasing effort for adopting complex indicators of sustainability that cross all three dimensions, thereby minimizing the limitations of using a reductionist approach, and simultaneously, emphasising the interdependence of the three pillars. In this perspective, Masera *et al.* (2000), Navarro (2002) and Partidário (1997) consider that the sustainability of a natural resources management system should be focused on the following attributes that also were pursued in this work. This is the capacity or ability to:

- generate goods and services required in a particular period of time (Productivity);
- maintain a state of dynamic equilibrium stable (Stability);
- return the state of equilibrium or maintain its productive potential, after undergoing a severe shock (Resilience);
- maintain its productive potential, after undergoing a severe shock (Reliability);
- find new levels of balance when faced with of long-term changes in the environment (Adaptability);
- distribute in a manner fair, both intra- and inter-generational, the relative benefits and costs the management of natural resources (Equity);
- regulate and control the interactions with the outside, defining endogenously its objectives, priorities, identity and values (Self-reliance).

Specifically for the wine sector, some work has been developed on this topic to evaluate the used sustainability assessment methodologies and the gathered findings generally between regions and production systems. A critical review of sustainability programs and initiatives in the wine industry in the New World, Europe and Italy was provided by Merli *et al.* (2018) to evaluate the capacity of its indicators to address the triple bottom line of sustainability. For this purpose, they have crossed the set of indicators applied by two wine industries initiatives (the Californian - CSWA and the Italian - VIVA) and the wine Italian companies (EMAS). Their findings express that while VIVA covers the triple bottom line, CSWA and EMAS focus mainly on environmental impacts of wine production. Santos *et al.* (2018) evaluate the sustainability dynamic regarding two different viticulturist regions of Portugal (Alentejo and North), focused on the three dimensions of sustainability and through the use of specific indicators. The results demonstrated that Alentejo presents the best indicators in terms of environmental sustainability, while North revealed a good social dimension and an increasing economic performance. Other studies on the sector have been used to compare and evaluate both conventional and organic farms. Gaviglio *et al.* (2017) showed that conventional farms seem to have better economic performance, however, the others present better results in environmental and in the mainstream of social indicators. More recently, Borsato *et al.* (2020) studied the use of multiple indicators to compare sustainability performance of conventional and organic vineyard management, supported by a case study in the North-East of Italy. They calculated the economic benefit and environmental indicators such as the Carbon Footprint, Water Footprint and an indicator of environmental performance that includes the fertilizers and pesticides management, landscape quality, organic matter content and soil compaction and erosion. The results revealed that organic management can be applied without economic losses and preserving the natural capital. In the opposite, Flores (2018) reviewed and analyse different frameworks for wine sustainability in six countries (South Africa, Australia, New Zealand, US, Chile and France) and highlight the fact that organic viticulture is not a synonym of sustainable viticulture. Focused in the concept of the sustainability, its triple bottom line dimension and attributes, this study adopts a set of indicators to find the wine Douro sub-region that allows a balance between the three dimensions of sustainability.

#### 4. RESULTS

Table 1 shows the sustainability indicators selected in this work and the average values gathered for our Douro sample. The result of the relationship between the same indicators per sub-region of the Douro, considering the Douro average as a reference (index 100) is presented in Figure 1. The winegrowing systems of Baixo Corgo have the best values from the production point of view and also greater investment capacities, but it is the subregion with the lowest grape sales prices. Only than 20% of the grape production coming from the farms of our sample is used for its transformation into wine. However, both in Baixo Corgo and Douro Superior, these figures are much lower (19 and 11%).

*Table following on the next page*

Indicators		Douro value
Environmental dimension		
Grape yield (kg/ha)		5784
Use of fertilisers and phytopharmaceuticals (€/ha)		504
Contribution to physical soil degradation (H/ha)		31
Landscape Physiographic Quality Index		3
Adoption of the organic farming production system (%)		3
Received agri-environmental aids (€/ha)		440
Favourable waste destination (%)		98
Soil analysis (%)		96
Good agricultural practices (%)		93
Social dimension		
Manpower on the farm (Days/ha)		53
Evolution of activity in the last 10 years	Evolution of the vineyard area (%)	37
	Evolution of machine use	60
Sustainability of the activity	Continuity of activity by the respondent (%)	95
	Existence of successor (%)	62
Land structure	Vineyard area (ha)	17
	Number of plots	6
Adoption of new techniques and/or production systems (%)		67
Qualification of the entrepreneur/winegrower (%)		67
Remuneration of work (€/day)		37
Participation in organizations of the sector	Farms belonging to sector organisations (%)	97
	Number of interventions/services requested from organisations (%)	2
Other sources of income		61
Economic dimension		
Benefits/costs ratio		1
Work productivity (€/UTA)		11548
Entrepreneur and Family Income (€/ha)		1269
Business or investment capacity (€/ha)		642
Sales price grape (€/kg)		0,78
Degree of dependence on external production factors (€/ha)		1867
Degree of indebtedness (%)		8
Grape destination (own processing) (%)		20
Organization of information (%)		45

*Table 1: Sustainable indicators of the farming systems of Douro*

Environmentally friendly practices are a major concern in Douro Superior, where less contribution is detected to the physical degradation of the soil through mechanical traction. This may be due to flatter slopes which will lead to more efficient traction. Also in this sub-region and in Baixo Corgo, the beneficial environmental behaviour is demonstrated by the higher proportion of farms using the organic production method.

*Figure following on the next page*

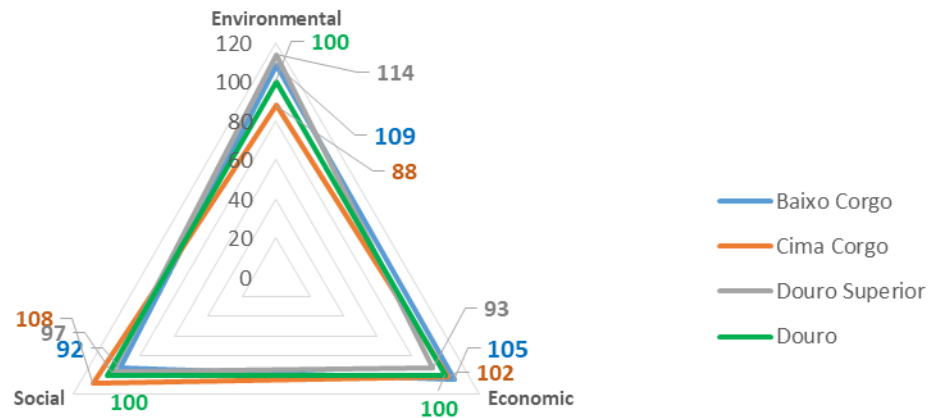


Figure 1: Sustainability assessment of the farming systems of Douro subregions (Douro average - Index 100)

In the social dimension, Cima Corgo stands out namely due to its positive evolution in the use of production factors such as land and the use of machinery and equipment, which goes against the intentions of abandoning the system. It is also in Cima Corgo that the best prices are paid for temporary labour.

## 5. CONCLUSIONS

Analysis of the findings leads to confirm an empirical trend of the conflict between the economic and environmental dimension of farms from the Douro sub-regions. When Douro average is used as the reference (Index 100), Baixo Corgo is the most profitable and dominates the economic indicators (105). Douro Superior has a weaker structure than the others but expresses the most favourable environmental aspects (114), with low chemical costs and also the managers of their farms have lower literacy levels. Cima Corgo is superior on social dimension and the entrepreneurs of their wine farms have other sources of income, in addition to the dominant land structure being more appealing to the viticulture activity. Baixo Corgo has shown to be the sub-region with greatest balance of the various dimensions of sustainability in their wine farms and the best practices identified in these three sub-regions can guide sustainable solutions to be adopted for the viticulture systems of the mountain contexts.

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## LITERATURE:

1. Annunziata, E., Pucci, T., Frey, M. and Zanni, L. (2018). The role of organizational capabilities in attaining corporate sustainability practices and economic performance: Evidence from Italian wine industry. *Journal of Cleaner Production*, N. 171, 1300-1311.
2. Binder, C. and Wiek, A. (2007). The role of transdisciplinary processes in sustainability assessment of agricultural systems, In Häni, F., Pintér, L. and Ferren, H., *Proceedings and Outputs of the First Symposium of the International Forum on Assessing Sustainability in Agriculture (INFASA)*. Bern (Switzerland), pp. 33-48.
3. Bordiga, M. (2016). Valorization of Wine Making By-Products. USA: CRC Press.

4. Borsato, E. et al. (2020). Use of multiple indicators to compare sustainability performance of organic vs conventional vineyard management. *Science of the Total Environment*, No 711: 135081.
5. CEC (Commission of the European Communities) (2001). Commission Regulation (EC) N.º 1837/2001 of 10 Sep 2001 amending Regulation (EEC) N.º 2237/77 on the form of farm return. In: *Official Journal of European Communities L 255*, 24.9.2001, 51 pp.
6. Christ, K.L. and Burritt, R.L. (2013). Critical Environmental Concerns in Wine Production: An Integrative Review. *Journal of Cleaner Production*, N. 53, 232-42.
7. De Olde, E.M., Oudshoorn, F.W., Sørensen, C.A.G., Bokkers, E.A.M. and De Boer, I.J.M. (2016). Assessing sustainability at farm-level: Lessons learned from a comparison of tools in practice. *Ecological Indicators*, N. 66, 391-404.
8. Fernandes, L. and Woodhouse, P. (2008). Family farm sustainability in southern Brazil: an application of agri-environmental indicators. *Ecological Economics*, N. 66, 243-257.
9. Flores, S.S. (2018). What is sustainability in the wine world? A cross-country analysis of wine sustainability frameworks. *Journal of Cleaner Production*, N. 172: 2301-2312.
10. Gaviglio, A., Bertocchi, M. and Demartini, E. (2017). A tool for the sustainability assessment of farms: selection, adaptation and use of indicators for an Italian case study. *Resources*, N. 4, Vol. 6, 60.
11. Gibbes, C., Hopkins, A.L., Díaz, A.I. and Jimenez-Osornio, J. (2020). Defining and measuring sustainability: a systematic review of studies in rural Latin America and the Caribbean. *Environment, Development and Sustainability*, N. 22, Vol 1, 447-468.
12. Gilinsky, A., Newton, S.K. and Vega, R.F. (2016). Sustainability in the Global Wine Industry: Concepts and Cases. *Agriculture and Agricultural Science Procedia*, N. 8, 37-49.
13. Hayati, D. (2017). *A Literature review on frameworks and methods for measuring and monitoring sustainable agriculture*. Technical Report N. 22. Rome: Global Strategy Technical Report.
14. Hill, M.M. and Hill, A. (2008). *Investigação por Questionário*. Lisboa: Edições Sílabo Lda.
15. IVV (Instituto do Vinho e da Vinha, 2021). *Evolução da Área Total de Vinha - Portugal Continental*. IVV.
16. Magalhães, N. (2012). *Manual de Boas Práticas Vitícolas na Região Demarcada do Douro*. IVDP e CCDR-N.
17. Marta-Costa, A.A. (2010). Sustainability study for the rearing of bovine livestock in mountainous zones. *New Medit*, N. IX, Vol 1, 4-12.
18. Marta-Costa, A.A. and Silva, E. (2013). Approaches for sustainable farming systems assessment, In Marta-Costa, A.A. and Silva, E., *Methods and Procedures for Building Sustainable Farming Systems*. Netherlands: Springer, pp. 21-29.
19. Maser, Ó., Astier M. and López-Ridaura, S. (2000) *El Marco de Evaluación MESMIS*, In Maser O, López-Ridaura S, *Sustentabilidad y Sistemas Campesinos*. México: GIRA A. C. – Mundi Prensa – PUMA.
20. Merli, R., Preziosi, M. and Acampora, A. (2018). Sustainability experiences in the wine sector: toward the development of an international indicators system. *Journal of Cleaner Production*, N. 172, 3791-3805.
21. Navarro, A.R. (2002). *Caracterización de la agricultura sostenible*. *La Práctica de la Agricultura y Ganadería Ecológicas*. Sevilla: Comité Andaluz de Agricultura Ecológica, 357-371.
22. Partidário, M. (1997). Desafios da interioridade: A riqueza ambiental e a vantagem da sustentabilidade. *Perspectivas de Desenvolvimento do Interior*. Lisboa: INCM, 59-69.
23. Rezaei-Moghaddam, K. and Karami, E. (2008). A multiple criteria evaluation of sustainable agricultural development models using AHP. *Environment, Development and Sustainability*, N. 4, Vol. 10, 407-426.



24. Santiago-Brown, I., Jerram, C., Metcalfe, A. and Collins, C. (2015). What Does Sustainability Mean? Knowledge Gleaned From Applying Mixed Methods Research to Wine Grape Growing. *Journal of Mixed Methods Research*, N. 9, Vol 3, 232-251.
25. Warner, K.D. (2007). The quality of sustainability: Agroecological partnerships and the geographic branding of California winegrapes. *Journal of Rural Studies*, N. 23, 142-155.
26. Santos, M., Galindro, A., Santos, C., Marta-Costa, A., and Martinho, V. (2019). Sustainability evolution of North and Alentejo vineyard regions. *Revista Portuguesa de Estudos Regionais*, N. 50, 49-63.
27. Varsei, M. and Polyakovskiy, S. (2017). Sustainable supply chain network design: A case of the wine industry in Australia. *Omega*, N. 66, 236-247.
28. Vecchio, R. (2014). Vitiviniculture best practices. *Bull.I'OIV*, N. 87, 31-54.
29. Zambon, I., Colantoni, A., Cecchini, M. and Mosconi, E. M. (2018). Rethinking sustainability within the viticulture realities integrating economy, landscape and energy. *Sustainability*, N. 10, Vol 2, 320.

# ECONOMETRIC ASSESSMENT OF THE ASSOCIATIVE ACTIVITY OF THE REPUBLIC OF AZERBAIJAN WITH THE COUNTRIES OF THE WORLD

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## ABSTRACT

*Since economics emerged relatively late from other mainstream disciplines, it naturally benefited from their methodological and conceptual advances. This means that there are objectively associative relationships between economics and other sciences. The main attention in the article is paid to this aspect, as an object of research, to the assessment of the associative activity of the Republic of Azerbaijan with the countries of the world. In the context of globalization of the world economy, the method of associative optimization of economic management is of particular importance for assessing the associative activity of each country with the world. For this, the analysis and evaluation of indicators expressed in different units of measurement, allows you to get more optimal results in the study. Based on the specific weights of the main foreign trade partners of any country, it is possible to analyze and evaluate the associative activity with the surrounding world in accordance with the entropy, the amount of information and its usefulness. The article, to one degree or another, clarifies the problems of associative economics, explains the methodology for analyzing and evaluating foreign trade using entropy - a measure of uncertainty. The article also analyzes the associative activity of the Republic of Azerbaijan with key partner countries in export-import operations, and also estimates the impact of the entropy of foreign trade on the partial entropy, calculated as the share of GDP in socio-economic indicators, in the applied software Eviews.*

**Keywords:** *associative economy, amount of information, entropy of socio-economic indicators, model adequacy, regression equation*

## 1. INTRODUCTION

In the globalizing world economy, the deepening of the international division of labor and world economic relations stimulate the convergence of the world environment, creating conditions for the expansion of economic ties between different countries. 80% of international relations are international trade. International trade is responding more quickly to economic and political changes in any region of the world, affecting economic growth in various sectors of the economy. Declining demand for oil on the world market in late 2020, unfavorable economic conditions and social tensions in some countries, sanctions, the explosion of Vale's radioactive and toxic storage facilities in Brazil on 25.01.2019, cyclone Veronica in Australia in March 2019 Significant economic losses to mines and other sectors (US \$ 1.2 billion) and the negative effects of the COVID-19 pandemic have negatively affected the development of world international trade, accounting for 3.0% of world commodity exports in 2019 compared to 2018. or \$ 579.34 million [5]. In this context, for each country, the development of an optimal foreign economic activity strategy is important to conduct economic analysis and evaluation of the associative activities of countries around the world for the implementation of effective foreign trade, investment, monetary and financial policy. In this regard, compared to other countries, oil-dependent countries in terms of exports, the Republic of Azerbaijan, which seeks to associate with the outside world, is forced to give priority to the development of export-oriented production, including increasing oil and gas exports. Since economics emerged relatively late from other main fields of science, it naturally benefited from their methodological and

conceptual achievements. This means that there are objectively associative relations between economics and other sciences. This article focuses on this aspect. Many of the ideas that have played an important role in clarifying the problem of the associative economy to one degree or another have been developed by world-renowned scientists working in the field of systemology, synergetic and cybernetics, including Ashenfelter O., Levine P.B., Zimmerman D.J., Hatry H. P. Imanov G., Hasanly Yu., Korolev M.A., Mishenin A.I., Khotyashov E.N., Lewandowski A., Wertbicki A., Musayev I.K., Stock J.H., Watson M. W., Simon A. H, Newell A. The ideas put forward by these scientists in their works are of great importance.

## 2. METHODOLOGY

Of particular interest is the world of associative communication and relations, which is described by associative thinking, which dominates the scientific way of thinking. This science is based on the methodological basis of systemology, synergetic and cybernetics, but is formed as an integration of traditional science and art. Based on the superiority of the ideas and methods of information theory in the study of socio-economic processes, including export-import operations in foreign trade, the research can be carried out by highlighting the possibilities provided by the associative information channel called "entropy". It should be noted that K. Shannon built the theory of information, which has a very important worldview, on the famous Markov chain. From this point of view, the terms of information theory can be successfully used in the description of economic processes in the nature of Markov chains. For example, measuring the complexity of economic systems with traditional methods is a very difficult problem. This is explained by the fact that the ever-increasing complexity of economic relations has a strong impact on the speed and efficiency of production, as well as the structure and operation of the management system. That is why it is very important to quantify the complexity factor. There is a great need to measure the complexity of the analysis of factors influencing the increase of labor productivity or reduction of the cost of production. is the number of product assortment positions, which is one of the most important moments that characterize the complexity of production. However, since different types of products are produced in different quantities and have different weights in the total product mass, it is not correct to determine the complexity of production only by the number of assortment items. These moments can only be taken into account with K. Shannon's formulas. Here, special weight should be used instead of probability. G. Tayl proposed to apply the entropy index and the amount of information for the purpose of analysis of production relations, which form the basis of inter-sectoral balance. However, this greatly complicates the cross-sectoral balance model. It is true that the more complex the model, the more information is obtained. However, in this case, the complexity of the model precedes the growth rate of the amount of information obtained from it, which is not a positive thing. In 1948, when K. Sennon created the information theory, he proposed a formula  $H = -n \log$  for entropy, based on a completely different logical platform. This has caused a great deal of controversy, as it is the same as Bolsman's formula  $H_1 = k \log \omega$ . L. Brillyuen resolved these disputes by the "principle of negatropy" [9, p.66]. L. Brillouin proved that there is a mathematical equality between the amount of information and entropy, but the opposite of direction. So that, since it is  $H = -n \log p$ ,  $p = n \log \frac{1}{p}$  is obtained from here. Under the condition  $\omega = \frac{1}{p}$  and  $n = k$ ,  $H_1 = H$  is obtained. He found that the only difference between thermodynamic entropy and cybernetic entropy was the inverse relationship between probabilities. At the same time, it is a fixed number, as in the Sennon formula. In this case, the proposed formula for cybernetic entropy also expresses the amount of information. In essence, cybernetic entropy is nothing more than the amount of information per symbol. Therefore, this answer  $\sum_{i=1}^m p_i \log \frac{1}{p} = -n \sum_{i=1}^m p_i \log p_i$  is obtained from the expression  $H = \frac{1}{n}$ .

The left side of this equation represents the entropy, and the right side represents the neutropenia, ie the amount of information that opposes the information. It should be noted that entropy, which is a measure of uncertainty, is essentially a real, positive, extensible quantity of information ore, with a value between 0 and 1. That is, the maximum entropy is equal to 1, and if the probability is equal, this answer is obtained and expresses maximum uncertainty-  $P = P_1 = P_2 \dots = P_i = \dots = P_m = \frac{1}{m}$

$$H_{max} = - \sum_{i=1}^m \frac{1}{m} \times \log \frac{1}{m} = \log m$$

This shows that reality is hidden in a climate of maximum uncertainty. Using entropy, it is possible to analyze and evaluate foreign trade along with all sectors of the economy. For this purpose, the entropy, quantity and usefulness of information on the specific weights of the main partner countries in the import or export of the country under study are important. Entropy will be calculated by the following formula based on the above studies [9, p.196].

$$H = - \sum_{i=1}^m p_i \times \log p_i \quad (2.1)$$

Here it means that  $H$  - entropy,  $p_i$ -  $i$  - the share of the partner country in the country's total imports or exports and  $i$ -  $i$ - indicates the partner country ( $i = 1 - n$ ). The amount of information is determined in accordance with formula  $\dot{I} = n \times H$  (2), and the usefulness of information is determined in accordance with formula  $F = H_0 - H_1$  (3). In these formulas it shows  $\dot{I}$  – the amount of information, the number of research cycles,  $F$  – the usefulness of the information, and the entropy, respectively. Using the research method, it is possible to assess the associative activity of the Republic of Azerbaijan with the world countries.

### 3. ASSESSMENT OF THE ASSOCIATIVE ACTIVITY OF THE REPUBLIC OF AZERBAIJAN WITH THE COUNTRIES OF THE WORLD

#### 3.1. Evaluation of the associative activity of the Republic of Azerbaijan with the main exporting countries

Entropy, the amount of information and its associative activity with the surrounding world are analyzed and evaluated according to the specific weights of the main partners in the import and export of any country in foreign trade. It should be noted that although the increase in the volume of entropy is mainly a sign of decline, and the decrease is a sign of progress, because economic events have their own characteristics, in one case an increase in entropy, in another case a decrease determines progress. Although the increase in entropy in foreign trade activity in each country is assessed as a positive situation for that country, the opposite is assessed as a negative situation for partner countries. The increase in entropy in both management and research processes indicates the complication of the problem. According to the customs statistics of the State Customs Committee of the Republic of Azerbaijan on foreign trade in 2020, the volume of exports to Italy is 4172239.62 thousand US dollars, and the total volume of exports is 13740567.63 thousand US dollars, so the structural index of exports will be 0.303643906. According to the formula (1), the entropy of exports of the Republic of Azerbaijan to Italy in 2020 will be the same as before.

$$H_{italiya} = -0,304 \times \log 304 = -0,304 \times (-0,517) = 0,157$$

Accordingly, according to the data of the State Customs Committee of the Republic of Azerbaijan for 2010-2020, according to the structural index of the main export partners of the republic, entropy, amount of information and potential usefulness of the country's independent economic import and export policy (1), If we perform calculations using formulas (2) and (3), we obtain the information shown in the table below.

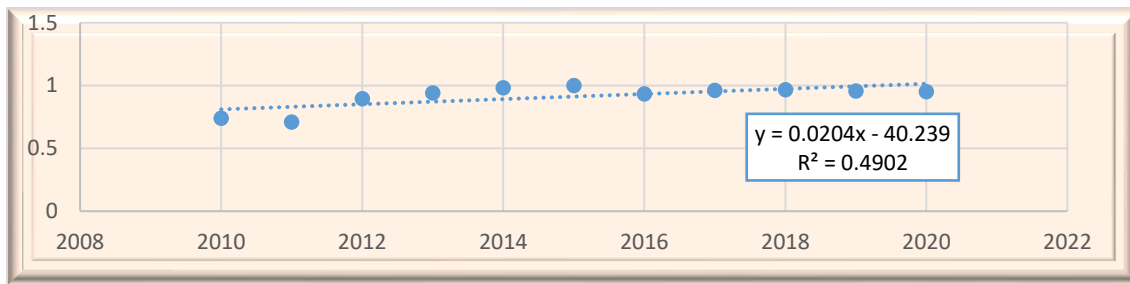
Countries / Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Italy	0,159	0,16	0,147	0,15	0,145	0,133	0,158	0,16	0,157	0,156	0,157
Turkey	0,017	0,03	0,04	0,036	0,038	0,109	0,093	0,095	0,096	0,122	0,136
Israel	0,089	0,047	0,081	0,067	0,088	0,076	0,064	0,058	0,079	0,079	0,047
India	0,026	0,026	0,087	0,061	0,052	0,036	0,057	0,042	0,058	0,064	0,049
Germany	0,002	0,034	0,056	0,071	0,093	0,098	0,061	0,045	0,056	0,063	0,03
China	0,029	0,004	0,016	0,009	0,007	0,01	0,044	0,045	0,013	0,054	0,047
Taiwan	0,026	0	0,043	0,033	0,034	0,018	0,08	0,031	0,053	0,025	0,0085
Russian Federation	0,052	0,06	0,056	0,061	0,045	0,049	0,046	0,054	0,05	0,053	0,0664
Spain	0,017	0,021	0,007	0,008	0,052	0,04	0,053	0,04	0,034	0,052	0,0389
Czech Republic	0	0,016	0,036	0,018	0,042	0,059	0,029	0,052	0,063	0,049	0,0294
Georgia	0,033	0,034	0,039	0,036	0,039	0,055	0,047	0,048	0,041	0,046	0,0499
Indonesia	0,053	0,05	0,083	0,108	0,095	0,054	0,013	0,046	0,046	0	0,00015
Canada	0,027	0	0,001	0	0,02	0,031	0,016	0,055	0,046	0,015	0,0002
Portugal	0,021	0,023	0,02	0,036	0,04	0,045	0,04	0,049	0,042	0,031	0,0306
France	0,092	0,124	0,084	0,063	0,081	0,079	0,062	0,046	0,037	0,043	0,0169
Austria	0	0,001	0,013	0,03	0,029	0,048	0,017	0,018	0,03	0,019	0,00035
Tailand	0,019	0,012	0,026	0,08	0,054	0,034	0,019	0,015	0,016	0,032	0,02
Greece	0,023	0,016	0,051	0,05	0,023	0,022	0,027	0,021	0,017	0,024	0,0541
Ukraine	0,057	0,05	0,009	0,022	0,006	0,005	0,008	0,043	0,032	0,031	0,0409
Other countries	0,152	0,148	0,143	0,126	0,122	0,126	0,112	0,1	0,112	0,103	0,129
Entropy (main countries)	0,741	0,709	0,896	0,941	0,983	0,999	0,933	0,961	0,967	0,957	0,9513
The amount of information	8,149	7,795	9,854	10,347	10,815	10,988	10,266	10,572	10,64	10,525	10,4643
Usefulness of information, %		3,2	-18,7	-4,5	-4,3	-1,6	6,6	-2,8	-0,61	1,04	0,55

*Table 1: Entropy, quantity and usefulness of information in the export of the Republic of Azerbaijan*

*(Source: Compiled by the author based on Source (4))*

As can be seen from Table 1, the share of the main partners of the Republic of Azerbaijan in exports tended to equalize on a regular basis for 2010-2020. This means that the state intervention in the export policy of the republic's economy is aimed at balancing exports. Over the past 10 years, the share of exports in Azerbaijan's foreign trade has fallen mainly to the Organization for Economic Cooperation and Development and the Black Sea Economic Cooperation. This is mainly due to the fact that the country's exports of goods included in the oil and gas sector account for 85-90% of total exports. As can be seen from the table data, entropy increased by 3.2% in 2011 compared to the previous year, by 6.6% in 2016, by 1.04% in 2019, and by 0.55% in 2020, although in 2012 decreased by 18.7% in 2013, 4.5% in 2013, 4.3% in 2014, 2.8% in 2017, and 0.61% in 2018. This shows that the Republic of Azerbaijan tried to balance its export policy in 2010-2011, but in 2012-2015 again began to give some advantages to some countries. Although the sharp decline in world oil prices and the value of the national currency against the US dollar since 2015 was accompanied by a tightening of export policy in 2016, entropy in 2017-2018 compared to the previous year due to some preferences in some countries. decreased. In the following years, as the export policy was aimed at balancing, the entropy of the main partner countries increased in 2019-2020 compared to the

previous year. The following graph shows the linear dependence of the change in entropy depending on the time factor according to the trend model.



*Figure 1: Entropy by major partner countries*  
(Source: Compiled by the author based on MS Excel program)

As can be seen from the graph, according to the trend model, there is an average ( $R^2 = 0.4902$ ) correlation between the entropy of the main partner countries and the time factor in the Republic of Azerbaijan, expressed by the regression equation  $y = 0.0204x - 40.239$ . The amount of calculated information suggests that the number of major exporting countries in 2010 varied from 8, in 2011 to 9, in 2012 to about 10, and in 2012-2020 to 10-11. In general, the usefulness of the information decreased by 21.12% during the period under review. This means that in the period covering 2010-2020, Azerbaijan has gained up to 21.12% of potential opportunities for independent economic export policy over the past 11 years, reducing its dependence on key countries.

### **3.2. Assessment of the associative activity of the Republic of Azerbaijan with the main partner countries in imports**

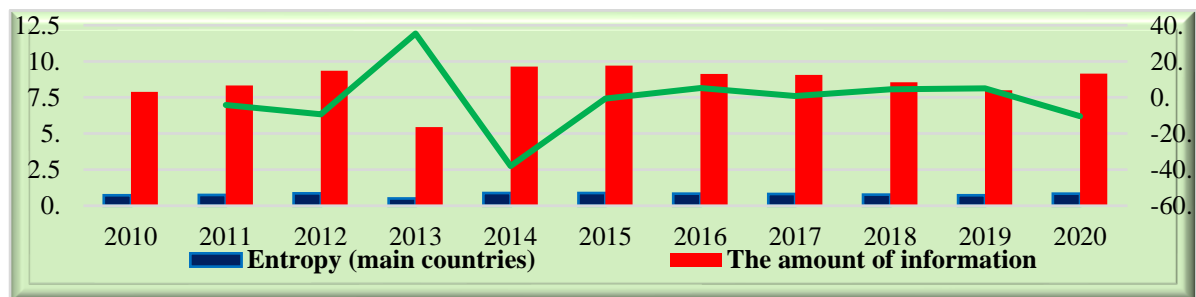
According to the data of the State Customs Committee of the Republic of Azerbaijan (SCCR) for 2010-2020, we calculated the entropy, amount of information and its usefulness based on the following table.

*Table following on the next page*

Countries	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Russia	0,219	0,213	0,143	0,014	0,143	0,156	0,192	0,177	0,164	0,168	0,183
Turkey	0,138	0,11	0,158	0,014	0,14	0,127	0,138	0,145	0,138	0,12	0,146
China	0,013	0,02	0,065	0,053	0,076	0,055	0,082	0,097	0,104	0,108	0,132
Great Britain	0,065	0,05	0,051	0,012	0,106	0,06	0,058	0,027	0,023	0,017	0,028
USA	0,008	0,089	0,074	0,035	0,061	0,092	0,053	0,082	0,046	0,056	0,059
Germany	0,045	0,058	0,081	0,077	0,077	0,075	0,045	0,051	0,058	0,052	0,054
Italy	0,037	0,031	0,027	0,023	0,022	0,064	0,039	0,036	0,03	0,027	0,037
Ukraine	0,008	0,024	0,056	0,055	0,046	0,034	0,034	0,052	0,041	0,034	0,039
Japan	0,054	0,014	0,025	0,027	0,026	0,06	0,031	0,019	0,034	0,016	0,018
Norway	0,004	0,005	0,006	0,003	0,024	0,016	0,032	0,018	0,009	0,007	0,006
Singapor	0,04	0,011	0,011	0,004	0,003	0,011	0,024	0,003	0,002	0,002	0,003
Brazil	0,001	0,004	0,019	0,035	0,024	0,013	0,019	0,02	0,015	0,008	0,007
Iran	0,003	0,048	0,018	0,019	0,016	0,064	0,018	0,027	0,04	0,033	0,028
France	0,024	0,016	0,019	0,04	0,017	0,023	0,018	0,018	0,016	0,018	0,042
Czech Republic	0,002	0,003	0,021	0,001	0,02	0,001	0,012	0,012	0,009	0,004	0,004
Korea	0,014	0,004	0,025	0,021	0,02	0,014	0,008	0,01	0,02	0,012	0,017
Austria	0,002	0,007	0,001	0,017	0,015	0,013	0,007	0,007	0,006	0,022	0,006
Kazakhstan	0,024	0,049	0,035	0,029	0,02	0,003	0,012	0,012	0,015	0,013	0,011
Niderland	0,015	0,001	0,015	0,017	0,02	0,001	0,008	0,01	0,008	0,01	0,011
Entropy (main countries)	0,716	0,757	0,85	0,496	0,876	0,882	0,83	0,823	0,778	0,727	0,831
The amount of information	7,876	8,327	9,35	5,456	9,636	9,702	9,13	9,053	8,558	7,997	9,141
Usefulness of information,%		-4,1	-9,3	35,4	-38	-0,6	5,2	0,7	4,5	5,1	-10,4

*Table 2: Entropy, amount of information and its usefulness calculated on the basis of special images of the main partners in the import of the Republic of Azerbaijan  
(Source: Compiled by the author)*

The results of the state intervention on import policy in the economy of the republic can be determined in Table 2 [3, 4].



*Figure 2: Entropy, quantity and usefulness of information on the specific weights of the main partners in the import of the Republic of Azerbaijan  
(Source: Compiled by the author)*

As can be seen from Figure 2, the share of Azerbaijan's main import partners in 2010-2020, with the exception of 2013, has always tended to equalize. This means that the state intervention in the import policy of the republic's economy is increasingly aimed at balancing imports. Balancing imports is an important indicator that prevents foreign countries from seriously influencing Azerbaijan's foreign policy. All of this was assessed by an increase in the number of key countries based on the amount of information calculated. As can be seen from the calculations, the number of major countries was about 10 based on the amount of information. The usefulness of the information for the period under review decreased by 11.5%, respectively.

This means that by reducing its dependence on major countries in 2010-2020, Azerbaijan has gained up to 11.5% of the opportunity to pursue an independent import policy over the past 11 years. As can be seen from the data in the table, the number of countries with a preference for exports in 2010-2020 varied between 8-11, and 5-10 for imports. This shows that the Republic of Azerbaijan has achieved a higher level of policy in imports than exports. As a result of the analysis, it can be concluded that the increase in entropy in foreign trade is positive for Azerbaijan and negative for the country's strong partners. This is explained by the fact that while it is beneficial for Azerbaijan to establish equal cooperation with all partner countries, for a relatively strong partner country, equal cooperation with Azerbaijan is not so positive. Thus, a strong country with political and economic interests in the Republic of Azerbaijan, of course, will try to expand its sphere of influence.

#### 4. INFLUENCE OF ENTROPY ON IMPORT AND EXPORT IN THE REPUBLIC OF AZERBAIJAN ON PARTIAL ENTROPY OF GROSS DOMESTIC PRODUCT

The growth of the Gross Domestic Product (GDP) of each country is one of the socio-economic indicators that characterize the country's economic growth and economic development. By calculating the entropy of socio-economic indicators, the trends in the development dynamics of the republic's economy can be more clearly identified. This can be seen more clearly if we look at the entropy of socio-economic indicators for the period from the independence of the Republic of Azerbaijan to 2000 and the years 2000-2020. The graph below shows the entropy of the main socio-economic indicators of the Republic of Azerbaijan for 1990-2020 [3].

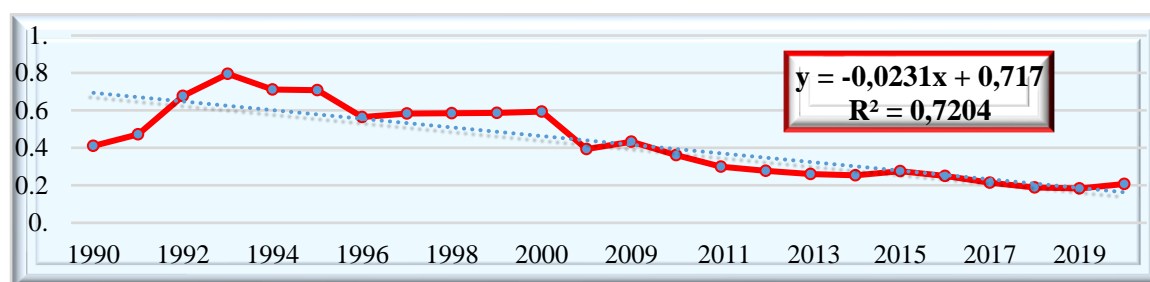


Figure 3: Entropy of the index of the main socio-economic indicators of the Republic of Azerbaijan for 1990-2020

(Source: The Central Bank of the Republic of Azerbaijan, The State Committee on Statistics of the Republic of Azerbaijan)

As can be seen, the entropy of socio-economic indicators increased rapidly between 1990 and 1993. The increase in entropy indicates that the Azerbaijani economy was in sharp decline at that time. Indeed, the signing of the contract “Contract of the century” on September 20, 1994, prevented the economic downturn in Azerbaijan in the early years of independence (1990-1993). As a result of economic reforms carried out since that period, the Republic of Azerbaijan has embarked on a path of dynamic development with the development of other sectors of the economy at the expense of the oil sector. As can be seen from the graph showing the entropy of socio-economic indicators, there was a reversal from recession to progress between 1993-1994, a stagnant economic stagnation between 1994-1995, significant progress in 1995-1996, 1996-2000. In the 1990s, however, a recession erupted. Although the decline in entropy in 1996-2008 resulted in progress in the Azerbaijani economy, the increase in entropy in 2009 created a tendency for economic decline in the same year. As can be seen, in the following years, ie in 2009-2014, the country's economy entered the path of sustainable dynamic development and achieved economic progress until 2015. In 2015, economic progress was replaced by recession due to the sharp fall in world oil prices and the depreciation of the national currency against the



US dollar. Although the decrease in entropy in 20016-2018 resulted in progress in the country's economy, the increase in entropy in 2019-2020 indicates that there is a tendency for economic recession. Naturally, this decline is due to the increase in the entropy of socio-economic indicators due to the effects of the global coronavirus (COVID-19) pandemic. Econometric analysis and assessment of the impact of entropy on imports and exports in the Republic of Azerbaijan to the relevant partial entropy of the share of GDP, which has the largest share in the socio-economic indicators of the country, is important. To conduct this assessment, the relevant partial entropy of the share of GDP in Azerbaijan for 2010-2020 was calculated. The table below shows the entropy calculated based on the specific weights of the main partners of the Republic of Azerbaijan in exports and imports, as well as the entropy calculated based on the specific weight of GDP in socio-economic indicators.

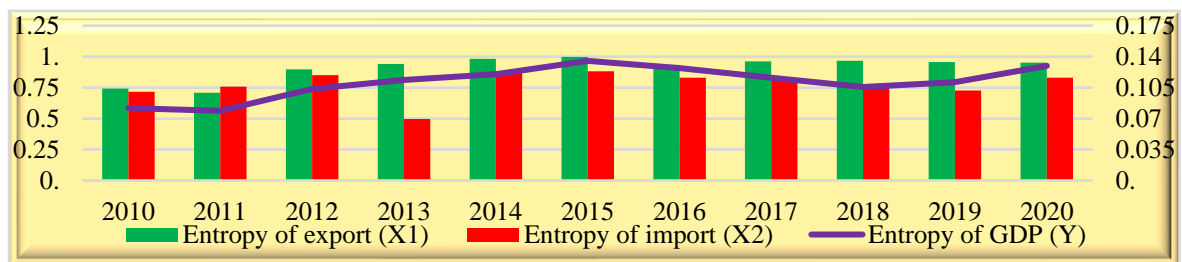


Figure 4: Entropy of exports, imports and GDP of the Republic of Azerbaijan for 2010-2020  
(Source: Calculated and compiled by the author based on information (3) and (4))

Correlation between factors affecting the level of entropy of GDP in the Republic of Azerbaijan for 2010-2020, calculated on the basis of the index of key socio-economic indicators for 2010-2020, according to Figure 4, which reflects the entropy of exports, imports and GDP in the Republic of Azerbaijan for 2010-2020. To perform a regression analysis, using the EViews mathematical software package, we first determine the results of changes in the indicators, i.e., the export (X1) and the entropy of imports (X2) and the Y factor. According to Figure 3, we obtain the following result using the EViews software package to conduct a regression analysis of the relationship between the factors affecting the entropy of GDP in the Republic of Azerbaijan for 2010-2020.

Dependent Variable: Y  
Method: Least Squares  
Date: 03/06/21 Time: 18:05  
Sample: 2010 2020  
Included observations: 11

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X2	0.023002	0.026643	0.863329	0.4131
X1	0.159772	0.030112	5.305899	0.0007
C	-0.052580	0.030454	-1.726507	0.1225
R-squared	0.803960	Mean dependent var		0.111136
Adjusted R-squared	0.754950	S.D. dependent var		0.018098
S.E. of regression	0.008959	Akaike info criterion		-6.365309
Sum squared resid	0.000642	Schwarz criterion		-6.256792
Log likelihood	38.00920	Hannan-Quinn criter.		-6.433713
F-statistic	16.40402	Durbin-Watson stat		1.719797
Prob(F-statistic)	0.001477			

Table 3: The result of the Eviews software package  
(Source: The EViews application was developed by the author based on the software package)

Based on the results obtained from the Eviews application software package, the regression equation will be as follows:

$$Y = 0.0230020033064 * X_2 + 0.159772413175 * X_1 - 0.0525798704998 \quad (3)$$

As can be seen from the table, there is a high correlation between the variables Y and X1, X2 on the Chedok scale (0.7-0.9)  $R^2 = 0,8040$ ). The presence of a coefficient of determination means that the corresponding regression equation is explained by 80.4% of the variance results and 19.6% by the influence of other factors not included in the model. Table 3 showing the results of Eviews software package. According to the data, F-statistic (Fisher's criterion) = 16.4 [13, p.333]. The F-Fisher criterion, compared to  $F_{Table}(a; m; n - m - 1)$  value, appears to be the F-Fisher criterion  $> F_{Table}(16,4 > 4,46)$ . This means that the regression equation as a whole is statistically significant [13, p.315]. This means that the built-in model (3) is adequate. The following graph shows the estimates of years and standard errors of the partial entropy calculated on the basis of the specific weight of GDP in the socio-economic indicators, as well as a number of characteristics of the use of the equation for forecasting purposes.

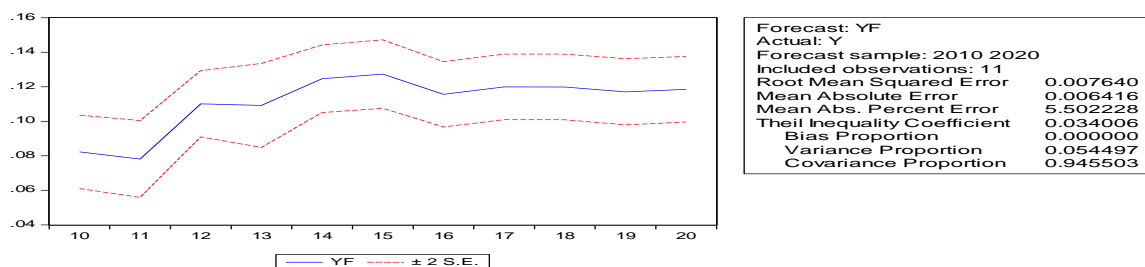


Figure 5: Prognostic characteristics of regression equations

(Source: The Eviews application was developed by the author based on the software package)

It should be noted that using the graph, it is possible to determine the forecast values of the partial entropy calculated on the basis of the specific weight of GDP in socio-economic indicators in Azerbaijan. If we calculate the elasticity coefficients calculated on the basis of these indicators on the built model, we get the following result [14, p.200].

$$E_{Entr.f exp.} = \frac{0,15589 \times 0,912573}{0,111136} = 1,312; E_{Entr.f imp.} = \frac{0,023 \times 0,778727}{0,111136} = 0,16116$$

## 5. THE RESULT

The study found that the increase in entropy in foreign trade is positive for Azerbaijan and negative for strong partner countries. Because, while it is very useful for Azerbaijan to establish the same level of cooperation with all partner countries, the same level of cooperation with Azerbaijan is not so desirable for one or another relatively strong partner country. Thus, a strong country with one or another economic and political interest in Azerbaijan is trying to expand its sphere of influence here. According to the EViews application software package, the partial entropy calculated on the basis of the specific weight of GDP in the socio-economic indicators of the Republic of Azerbaijan, the entropy calculated on the basis of the special weights of the main import and export partners increases by 1.32% and 0.16%, respectively. As can be seen. 1% increase in import entropy increases the partial entropy calculated on the basis of the share of GDP in socio-economic indicators by 1.32%, which is 8.1 times the increase in the share of export entropy calculated on the basis of the share of GDP in socio-economic indicators. times higher. The decrease in the entropy of foreign trade is important, as the increase in the partial entropy calculated on the basis of the specific weight of GDP in socio-economic indicators

results in an increase in the economic downturn in the country's economy. In this regard, the optimal level of increasing the competitiveness of all sectors of the economy depends on government regulation of the economy, as well as the liberalization of foreign trade, taking into account the influential factors.

#### LITERATURE:

1. Ashenfelter O., Levine P.B., Zimmerman D.J. (2006). Statistics and Econometrics: Methods and Applications. Wiley, 320 p.
2. Hatry H. P. Measuring the Effectiveness of Nondefence Public Programs. Operations Research, 1970, 18(5), 11A.
3. [https://www.stat.gov.az/source/system\\_nat\\_accounts/](https://www.stat.gov.az/source/system_nat_accounts/). Date of application: February 25, 2021.
4. <https://customs.gov.az/en/faydali/gomruk-statistikasi/>. Date of application: February 25, 2021
5. <https://unctadstat.unctad.org/EN/>. Date of application: February 25, 2021
6. Imanov G., Hasanly Yu. (2001). Models of socio-economic development of Azerbaijan, macroeconomic analysis, (248 p.) Baku: Scientific publishing house.
7. Korolev M.A., Mishenin A.I., Khotyashov E.N. (1984). Theory of Economic Information Systems, Moscow: Finance and Statistics.
8. Lewandowski A., Wertbicki A. Theory, Software and Testing, Examples in Decision Support Systems. Working paper WP-8X 071, International Institute for Applied Systems Analysis, Laxenburg, Austria, 1988
9. Musayev I.K., Associative optimization of economic management. Baku, 2005, p. 320.
10. Stock J.H., Watson M. W. Introduction to Econometrics. 3rd edition, Addison-Wesley, 2010, 840 p.
11. Simon A. H, Newell A. Heuristic problem solving: the next advance in operations research//Operations research. 1988.V.6.
12. United Nations Conference on trade and development. "Impact of the COVID-19 Pandemic on Trade and Development" transitioning to a new normal. United Nations. Geneva, 2020.
13. Yadigarov T. A. (2019). Research operations and solutions of econometric tasks in software packages MS Excel and Eviews: theory and practice: Monograph (352 p.). Baku: Europe" publishing house.
14. Yadigarov T. A. (2020). Customs statistics and modern information technologies: Monograph (520 p.). Baku: "Europe" publishing house.
15. Yadigarov T. A. (2018). Assessment of the associative activity of the Republic of Azerbaijan with the countries of the world. Sh. Muradov. News of NANA. Economics Series: World economy (p.112-117). Baku: Science and Knowledge Publishing House.
16. Zadeh L.A. Similarity relations and fuzzy orderings. // Inform. Sci., 1971. VOL.3. P. 177-200.

# GROWING IMPORTANCE OF CREATIVE THINKING IN HIGHER EDUCATION IN THE 21ST CENTURY

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## ABSTRACT

*In this study, we analyse the growing importance of creative thinking in higher education. The central argument is that creativity is at the heart of knowledge economy and successful life. We aim specifically to characterize domain-specific creative thinking, especially focusing on different methodological phenomena of changing domains. In the first part of the paper, we introduce the contextual background and define relevant key concepts (skills gap, creative thinking, transversal skills, soft skills, changing domains), then we explain conceptual changes and the growing complexity of creative thinking. In the second part, we analyze some research data from focus group interviews at Budapest Metropolitan University. The findings put great emphasis on teachers' personality, interactive teaching methods and learning atmosphere. Finally, we conclude our thoughts posing some questions and dilemmas.*

**Keywords:** *creative thinking, knowledge economy, soft skills, transferable skills*

## 1. INTRODUCTION

### 1.1. Research problem

The apropos of our study – on the one hand - gives the LinkedIn-research in 2019 dealing with the most important skills in work turning to the new decade.<sup>1</sup> Research tries to map the most critical soft and hard skills. Over 660+ million professionals and 20+ million jobs to reveal the 15 most in-demand soft and hard skills. Basically, *'talent developers want to help them identify skills gaps is to know what the most in-demand skills will be in the future'*. Skills gap refers to the difference between the skills required for a job and the skills an employee actually possesses. On the other hand, the focus of the innovative domain of the next PISA-survey (OECD's Programme for International Student Assessment) will be creative thinking in 2021 (Lucas – Spencer, 2017). *'PISA is not only the world's most comprehensive and reliable indicator of students' capabilities, it is also a powerful tool that countries and economies can use to fine-tune their education policies.'* (Angel Gurría, OECD Secretary-General)<sup>2</sup>. Turning back to the skills gap, one of the fundamental aims is to define and improve individual's skills. Basically, skills have been divided into two parts. Soft skills are broadly classified as a combination of personality traits, behaviors, and social attitudes, for instance leadership skills, teamwork, communication skills, problem solving skills, work ethic, flexibility/adaptability,

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<sup>1</sup> New LinkedIn Research: Upskill Your Employees with the Skills Companies Need Most in 2020  
<https://learning.linkedin.com/blog/learning-thought-leadership/most-in-demand-skills-2020?trk=e-ml-mktg-ldc-lit-20200115-mids-global-email1&src=e-ml&mcid=6614827356689440768&cid=7010d000001KpjkAAC>

<sup>2</sup> Andreas Schleicher: PISA 2018. Insights and Interpretations.  
<https://www.oecd.org/pisa/PISA%202018%20Insights%20and%20Interpretations%20FINAL%20PDF.pdf>

interpersonal skills.<sup>3</sup> Hard skills are part of the skill set that is required for a job. They include the expertise (knowledge and abilities) necessary for an individual to successfully do the job, for instance, analytical reasoning, business analysis, sales, video production.<sup>4</sup> Turning back to the LinkedIn research, the top soft skills are creativity, persuasion, collaboration, adaptability and emotional intelligence, As the research concluded: *'this year's results signal that companies are gravitating more toward talent with strong people-oriented skills.'*<sup>5</sup> Comparing the required transversal skills from an economic and educational perspective, we find a lot of similarities on the lists. (Lucas and Spencer, 2017) Basically we agree with Lucas's statement: *'creative thinking is an important capability for success in life'*.<sup>6</sup> As we can see, creativity is at the heart of the knowledge economy and successful life. What about education? In this paper we will focus on the growing importance of creativity, especially creative thinking in higher education in the 21st century.

## 1.2. Research focus

Let us imagine an everyday-life situation in project-based courses in higher education. The first critical part is questioning. If you are lucky, some students have original, interesting, open questions. Generally, many students do not ask any questions at all. The second problematic issue is generating ideas. Some students immediately have a lot of ideas during brainstorming activities, the others look at you with a bored face without any ideas. The third critical point is based on project presentations without creativity, for example, reading texts and talking monotonously. Why are original questions, ideas and presentations so important? Because of creative thinking.

## 1.3. Context

Economic, social, scientific and cultural changes have a significant impact on education, especially changing the education system because of growing needs for global competitiveness and transformation. (Cheng, 2019; Vass, 2006) In fact, quality of knowledge, in a wider sense and quality of education is a key to economic progression. (Hanushek – Woessmann, 2009, Hanushek-Woessmann, 2015a, 2016, Hanushek, 2019) Hanushek and Woessmann pointed out strong coherence between cognitive skills, basic skills, learning outcomes and economic productivity. (Hanushek, E. A. – Woessmann, L., 2015b). Florida stated that *'the real driving force is the rise of human creativity as the key factor in our economy and society'*. (Florida, 2011. 5) A knowledge-intense economy and knowledge-based society prioritize creativity, especially effective development of creative thinking. Focusing on transferable skills, for instance, creative thinking, and rethinking education systems is based on Davidson's world-famous data. Namely, 65% of elementary school students in the United States would grow up to do jobs not currently in existence. (Davidson, 2011) Not surprisingly, in this context, the growing importance of transferable skills, such as creativity and innovation can strengthen inventions in new business models. But the context of this new model is VUCA-world, which has four phenomena: volatility, uncertainty, complexity and ambiguity (Fadel, Bialik and Trilling, 2015) Mark Twain's message from the past is relevant: *'It's difficult to make predictions, especially about the future.'* It is much more true in the 21st century. The growing importance of transferable skills raises a fundamental question: *'Knowing what we know about how children learn and what is necessary for individuals and societies to succeed and thrive,*

<sup>3</sup> The 7 Soft Skills You Need to Be Successful <https://www.omniagroup.com/the-7-soft-skills-you-need-to-be-successful/>

<sup>4</sup> The Top Hard Skills Employers Seek <https://www.thebalancecareers.com/what-are-hard-skills-2060829>

<sup>5</sup> New LinkedIn Research: Upskill Your Employees with the Skills Companies Need Most in 2020 <https://learning.linkedin.com/blog/learning-thought-leadership/most-in-demand-skills-2020?trk=e-ml-mktg-ldc-lit-20200115-mids-global-email1&src=e-ml&mcid=6614827356689440768&cid=7010d000001KpjkAAC>

<sup>6</sup> Bill Lucas: The Power of Creative Thinking. <https://www.thersa.org/discover/publications-and-articles/rsa-comment/2017/11/the-power-of-creative-thinking>

*what should students learning?*’ (Fadel, Bialik and Trilling, 2015. 55) Basically, transferable skills are a significant trans- and interdisciplinary phenomenon. Technological and economic creativity has strong interactions with artistic and cultural creativity (Florida, 2011).

## 2. LITERATURE REVIEW

We try to analyze creative thinking from this trans- and interdisciplinary dimension. We agree with Csikszentmihalyi statement: *‘Most of the things that are interesting, important, and human are the results of creativity’* (Csikszentmihalyi, 1996. 1). On the basis of 30 years of Csikszentmihalyi’s research work on creativity, his model has three elements: culture, person and field. According to him, creativity is a domain-specific skill, *‘a process by which a symbolic domain in the culture is changed’*. (Csikszentmihalyi, 1996. 8) Changing the existing domain is a key factor to understanding creative thinking. No doubt, this is a challenging, complex process with some heuristic moments and incalculable steps. In fact, Csikszentmihalyi’s model and process of creativity has played an important role in creativity research, including social-personality approaches to the study of creativity (Sternberg and Lubart, 1999). Turning back to the domain-specific character of creativity, it emphasizes the importance of structure of knowledge. Firstly, quantity of knowledge matters in creative thinking, but parallel to this accumulation, different original combinations of the structural elements are much more important in this process. Csikszentmihalyi analyzed the process of creativity differently, namely he defined five components: preparation, incubation, insight, evaluation and elaboration. Preparation is based on interesting things and curiosity. In the incubation component, unexpected combinations play an important role. The third component contains a lot of „Aha!”-moments. Evaluation requires self-reflections and self-criticism in order to „decide whether the insight is valuable and worth pursuing”. Finally, elaboration is the hardest work among the different components (Csikszentmihalyi, 1996). Turning back to the past of creativity research, creativity traditionally has two fundamental components: originality and task appropriateness (Guilford, 1950) On the basis of these components, Guilford differentiated two types of thinking: convergent and divergent. Divergent thinking is the process of generating multiple ideas to maximize the range of possible solutions, applications and examples. Let us see for instance two types of conclusion in essays in higher education. The first type of conclusion is based on the previous content and gives simplified, descriptive summarization of the topic. The second type of conclusion is based on dilemmas, alternatives and different scenarios. In fact, the first is related to convergent thinking, but the second is based on divergent thinking. Guilford defined the concept of divergent thinking (later Torrance, 1970), according to four characteristics:

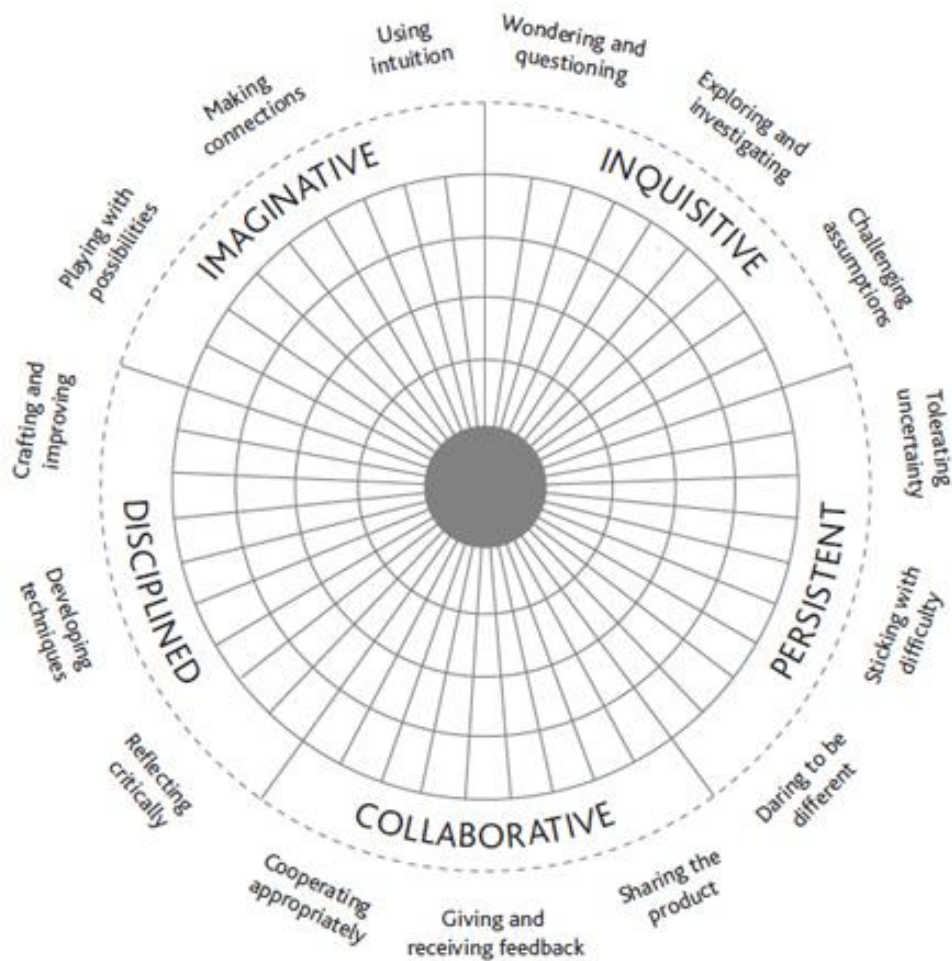
- fluency (the ability to produce a great number of ideas or problem solutions in a short period of time);
- flexibility (the ability to simultaneously propose a variety of approaches to a specific problem);
- originality (the ability to produce new, original ideas);
- elaboration (the ability to systematize and organize the details of an idea in one’s head and carry it out)<sup>7</sup>

Parallel to this conceptual work, Guilford created the Structure of Intellect in order to analyze complexity between creativity and IQ. His model contains three components: content, product and operation. Firstly, he focused on measuring personal characteristics in creativity using his model. Secondly, three components (content, product and operation) have an enormous impact on learning: *‘students gain a better understanding of the ways in which they are able to learn*

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<sup>7</sup> J. P. Guilford [https://www.newworldencyclopedia.org/entry/J.\\_P.\\_Guilford](https://www.newworldencyclopedia.org/entry/J._P._Guilford)

*and the ways in which they use the knowledge'* (Richards, 2001). Thirdly, from a teaching perspective, these components emphasize the importance of cross-cultural strategies and interdisciplinary approach. No doubt, this psychometric approach to creativity stressed personal phenomena, but it started to indicate complexity. Under the umbrella of giving more details and research data about divergent thinking, the increasing complexity of creativity should be mentioned. Structuralization of creativity has resulted in some models, which can put consciousness into the developmental process. For instance, the Center for Real-World Learning defined a five-dimensional model of creativity.



*Figure 1: Five-dimensional model of creative thinking  
(Source: The Center for Real-World Learning)*

The five dimensions are: inquisitiveness (wondering and questioning, exploring and investigating, challenging assumptions); persistence (daring to be different, sticking with difficulty, tolerating uncertainty); collaboration (cooperating appropriately, giving and receiving feedback, sharing the product); discipline (crafting and improving, developing techniques, reflecting critically); imagination (playing with possibilities, making connections, using intuition). (Lucas and Spencer, 2017) Obviously, this is a more complex view of creativity than Guilford's model. The five-dimensional model is a matrix or a wheel in order to indicate the detailed structure and overlapped items between the dimensions. Basically, there are two pillars in this model, critical thinking and problem-solving.

Lucas and Spencer give some examples of the five dimensions at the primary and secondary school levels (Lucas and Spencer, 2017). Let us see some examples of the dimensions in higher education. At the inquisitive dimension, students can pose open-questions (Why?, How?), which are based on their curiosity, questioning and intrinsic motivation in order to think critically about the topic. Dimension of persistence is based on debating, arguing, listening and tolerating the other point of view using for instance place mat and mind map. This dimension of collaboration is related to project-method and problem-based learning. Working in teams requires the previous dimension (see overlapped items) and gives evidence about the social context of creativity. Collaboration prefers continuous feedback and sharing different ideas, debating and critical views. Parallel to collaborative work, assessment is based on cooperative quality standards and evaluation indicators. The dimension of discipline requires a lot of reflections and comments in order to create the most qualitative product, learning from mistakes and experience. The dimension of imagination is '*the heart of creative thinking*' and requires analysis and synthesis in order to imagine different solutions, scenarios and possibilities.

### **3. PRIMARY RESEARCH**

The following section explores some of these theoretical notions in context from the perspective of students from a higher education institution in Budapest.

#### **3.1. Research aim**

Our research aim is to map students' prior knowledge on creativity and creative thinking.

#### **3.2. Research methodology: Student Focus Group Interviews and data analysis**

Focus groups were undertaken with students in the researchers' own institution in order to gain some insights into what students understand by creative education. Three student focus groups were undertaken with groups of Masters students at Budapest Metropolitan University between 2018-2020 who were studying a course entitled Creative Industries which runs yearly in the Spring semester. This cohort of students was chosen deliberately, as they were studying subjects relating to creative thinking, creative education as well as creative industries management. It was important that the students understood these concepts at a relatively high level in order to be able to discuss the issues in depth. Each focus group was undertaken for 80 minutes during the students' usual class time. The first two (2018, 2019) were undertaken face-to-face, whereas the third (2020) took place on Zoom during the Covid-19 lockdown period (however, the students had already experienced three classes face-to-face before the lockdown, so they had met each other and the teachers). The groups consisted of mixed nationalities (at least 7-8 nationalities each time) which reflect the internationalization of the authors' institution. Both female and male students took part and the gender balance was more or less equal.

#### **3.3. Research Results**

Students discussed how some teachers tried to develop students' creative thinking and skills more than others. It very much depended on the personality and technique of the teacher. Interactive, friendly teachers who created a good atmosphere and involved students were the most creative. Overall, they agreed that creative education needs to be based on interactive classes where students are encouraged to ask questions and give their opinions. The importance of using examples in context was also emphasized, as well as applying activities to real-life situations. One example of this was writing a business plan as well as project-based learning. It was not thought that creative thinking was more present in arts-related subjects, but could also be brought to business or marketing subjects quite easily. On the other hand, it was said that numerical subjects were not taught in a very creative way and that more technological tools could be used in future (by 2020, this issue had been addressed and was intensified during



Covid-19 lockdown). When asked how much co-creativity had been present in their higher education experience, many students were somewhat confused about the term. It was explained as a combination of freedom to choose and interactivity. Students felt that they had not had much freedom in choosing subjects (the national curriculum in Hungary is rather rigid), but they had had some choices in course content, assessment or presentation subjects. Interaction was rated positively on the whole, not only with certain teachers but also between students. Groupwork was valued, but it was not always preferred, especially when grades were given for it. It was noted that during the Coronavirus lockdown period, it was much harder to do groupwork which was also deemed an important part of creative education. The students also felt overloaded by individual tasks, which compromised their time rather than their creativity. Some students felt that being locked in their small room was not conducive to creativity as it was thought that inspiration also needs to come from the outside world, including social contacts and the natural environment. They found it harder and less motivating to manage their own time and to work alone. On the other hand, some students stated that it had given them time to learn new skills and methods. It had removed the stress and time needed for commuting, for example. However, it was agreed that regular feedback from teachers was needed for both motivation and full engagement.

#### 4. CONCLUSIONS AND IMPLICATIONS

Turning back to Csikszentmihalyi's fundamental statement: *'Changing the existing domain is a key factor understanding creative thinking.'* On the basis of our study and experience in higher education, creativity, in fact, is a domain-specific skill. But as we see from the Five-dimensional model of creative thinking, complexity is growing. This more complex, multi-dimensional view of creative thinking has affected the process of *'changing the existing domain'* especially in higher education. It requires a high-quality transferable and non-cognitive skills and inter- or transdisciplinary mindset. In practice, this is the flexible process, which is based on teaching professionalism and strong students' intrinsic motivation. As the global knowledge economy has been expanding and research data on creative thinking has been growing, the basic, a relevant definition of creative thinking has been changing. *'Creative thinking is both the capacity to combine or synthesize existing ideas, images, or expertise in original ways and the experience of thinking, reacting, and working in an imaginative way characterized by a high degree of innovation, divergent thinking, and risk taking.'*<sup>8</sup> This creativity-based synthesis and original expertise can promote students to be able to apply their knowledge to real-life situations in higher education. Application of knowledge and creative thinking has strong coherency. In other words, creativity *'is a combination of several key factors'*, for instance deep knowledge, creative thinking skills, motivation, curiosity and metacognition. (Stewart, 2012) This growing complexity has resulted in some changes in higher education in order to revise thinking about learning and teaching in higher education. On the one hand, our findings suggest that the personality of a teacher in higher education plays an important role: interactive, friendly teachers who created a good atmosphere and involved students were the most creative, which has an impact on student expectations of creative thinking. On the other hand, the responses indicated a strong coherency between effective interaction and high-quality creative thinking. Finally, we raise some questions and pose dilemmas. How can higher education transfer and adapt these above-mentioned processes into practice? How can higher education put greater emphasis on the development of creative thinking turning to a student-centered approach (problem-solving learning, project-based education)? How can higher education recognize that high-quality education is a key factor to future economic growth?

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<sup>8</sup> Creative Thinking VALUE Rubric <https://www.aacu.org/value/rubrics/creative-thinking>

**LITERATURE:**

1. Cheng, Y. C (2019): *Paradigm Shift in Education: Towards the Third Wave of Effectiveness*. Routledge, New York, NY
2. Csikszentmihalyi, M. (1996): *Creativity Flow and the Psychology of Discovery and Intention*. HarperCollins Publishers, New York, NY
3. Davidson, C. N. (2011): *Now You See It: How Technology and Brain Science Will Transform Schools and Business for the 21st Century*. Penguin Books
4. Fadel, C.-Bialik, M.-Trilling, B. (2015): *Four-Dimensional Education*. Center for Curriculum Redesign, Boston, MA
5. Florida, R. (2011): *The Rise of the Creative Class*. Basic Books, A Member of the Perseus Books Group, New York.
6. *The Future of Jobs. Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution*, World Economic Forum, January 2016  
[http://www3.weforum.org/docs/WEF\\_Future\\_of\\_Jobs.pdf](http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf) (retrieved: 04.01.2020.)
7. Guilford, J.P. (1950): Creativity. *American Psychologist*. 5. 444-454.
8. Hanushek, E. A. – Woessmann, L. (2009): *Do Better Schools Lead to More Growth? Cognitive Skills, Economic Outcomes, and Causation*. Working Paper No. 14633. Cambridge, MA: National Bureau of Economic Research, DOI: 10.3386/w14633  
<http://www.nber.org/papers/w14633> (retrieved: 04.01.2020.)
9. Hanushek, E. A. (2019): *The Economic Value of Improved Schools*. Hoover Institution, Stanford University
10. <https://www.niet.org/assets/ResearchAndPolicyResources/974a262a85/eric-hanushek-the-economic-value-of-improved-schools.pdf> (retrieved: 04.01.2020.)
11. Hanushek, E. A. – Woessmann, L. (2015a): *The Knowledge Capital of Nations: Education and the Economics of Growth*. Cambridge: MIT Press
12. Hanushek, E. A. – Woessmann, L. (2015b): *Universal Basic Skills: What Countries Stand to Gain*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264234833-en> (retrieved: 04.01.2020.)
13. Hanushek, E. A. – Woessmann, L. (2016): Knowledge capital, growth, and the East Asian miracle. *SCIENCE sciencemag.org* 22 JANUARY 2016 • VOL 351 ISSUE 6271
14. <https://hanushek.stanford.edu/sites/default/files/publications/Hanushek%2BWoesmann%202016%20Science%20351%286271%29.pdf> (retrieved: 04.01.2020.)
15. Lucas, B. and Spencer, E. (2017): *Teaching Creative Thinking*. Crown House Publishing Limited Wales, UK
16. Richards, R. (2001). Millennium as opportunity: Chaos, creativity, and Guilford's structure of intellect model. *Creativity Research Journal*, 13(3-4), 249-265.
17. <https://creativityepsy5750.wordpress.com/guilfords-sol/> (retrieved: 04.01.2020.)
18. Sternberg, R.J. and Lubart, T. I. (1999): The Concept of Creativity: Prospects and Paradigms. In: Sternberg, R. J. (ed.): *Handbook of Creativity*. Cambridge University Press. 3-16.
19. Stewart, V. (2012): *A World-Class Education*. ASCD, Alexandria, VA.
20. Torrance E. P. (1970): *Encouraging Creativity in the Classroom*. Dubuque, IA:William C. Brown

# COCOA MARKETS AND VALUE CHAINS: IMPLICATIONS FOR SÃO TOMÉ AND PRÍNCIPE ORGANIC SMALLHOLDERS

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## ABSTRACT

*Cocoa is one of the main goods in the world agricultural trade markets, occupying the third position in exports. The paper introduces the cocoa value chain worldwide, its asymmetries, and the supply and value chain specific to the São Tomé and Príncipe (STP) organic cocoa. It aims to understand this value chain's internal and external tensions and analyse its potential to be inserted in the international markets. The study uses panel data analysis from the FAOSTAT database. The tensions mentioned are due to the asymmetries of international markets and those regarding the production of organic cocoa in STP. At the level of STP and, despite measures to support organic production as a valuable alternative to the country's development strategy, imbalances in the value chain persist that compromise the livelihoods of small producers responsible for most of production exported and the sustainability of the ecosystem.*

**Keywords:** *International markets, value chain, organic cocoa smallholders, São Tomé and Príncipe (STP)*

## 1. INTRODUCTION

Cocoa is one of the main goods in the world agricultural trade markets, occupying the third position in exports (Blare and Useche, 2013; Díaz-Montenegro, 2019; Galarza, 2012). It is mainly concentrated in the tropics, in Africa, which concentrates two thirds of world production and where Côte d'Ivoire is the main country with around 40% of the world production (Voora et al., 2019). Approximately 4 million tons of cocoa beans have been annually worldwide produced since 2010. The combined export value, of whole or broken grades, raw or roasted, amounted in 2017 to US \$ 8.6 billion, with an estimated the global cocoa market grows at an annual rate of 7.3%, from 2019 to 2025, to reach \$ 16.32 billion (Voora et al., 2019). The chocolate industry consumed about 43% of all cocoa in 2017, with a global retail market value of \$ 106.19 billion in 2017 and forecast to be \$ 189.89 billion by 2026 (Eghbal, 2018). Cocoa is produced mainly by hand, by about 5 million households, in more than 50 countries, of which 70% are small farmers, with one and three hectares. Even so, they represent more than 80% of the total cocoa available in the markets (Díaz-Montenegro et al., 2018; Voora et al., 2019) and guarantee the livelihood of 40 to 50 million people worldwide (Voora et al., 2019). Worldwide, the cocoa value chain is characterized by asymmetric power relations with increasing control by some dominant companies that have the ability to decide how and where value is created

and distributed. Five companies account for 56% of the chocolate market, of which three account for half of the total cocoa supply. As a result, there is an asymmetric distribution of value, with producers receiving only 5% of the price paid by the final consumer, while marketing and processing activities capture 25% and the processing and sales of retail chocolate capture a 70% share of revenues (Abdulsamad et al. 2015; Fountain and Huetz-Adams, 2020; Squicciarini and Swinnen, 2016). In STP, the cocoa value chain is very fractional at the producer level, where approximately 70% of organic producers develop their activity in plots of less than 2 hectares (Prazeres, 2018; Prazeres and Lucas, 2020). In 2018, the number of organic cocoa producers was approximately 3300 (Prazeres, 2018) and cocoa, which occupied about 80% of the agricultural area, represented 90% of the country's export earnings (ANEME, 2018). In addition to its contribution to GDP, through the high weight of exports in the agricultural sector, the cocoa culture guarantees the livelihood of many families by creating jobs, developing local microeconomies and giving an international image to the country (Prazeres, 2018). This paper aims to characterize the cocoa market and value chain globally and in STP. It is intended to show the main dynamics and challenges that can reduce the asymmetries between the different actors and create value, as a way of reducing poverty and improving the quality of life of small agricultural households. In addition to this introduction, the document is structured in six sections. In the second, the used methodology in the development of the exploratory study is presented. The main characteristics of the international cocoa market, whether conventional or organic, form the body of the third section, which also includes the international cocoa value chain. The fourth focuses on the description of the organic cocoa value chain in STP. The fifth and last sections present, respectively, the implications for small producers related to the characteristics of the international market and the value chain and the main conclusions and perspectives for the continuity of the research.

## **2. RESEARCH METHODS**

The paper combined panel data from FAOSTAT (FAO, 2021) with literature review and field observation in order to look and characterize the cocoa market and value chain, globally and in STP, to know policies and practices development around the world and, to engender new ideas and directions for STP organic sector sustainability. The panel data analysis was carried out for the 20 main producing countries. It started with the identification and choice of the indicators and time period in FAOSTAT and its subsequent treatment and interpretation. The indicators, collected for the last available decade (2007-2017) included: (1) Production Area (ha); (2) Yield per hectare or Productivity (Kg/ha); (3) Total Production (Ton), (4) Exports in Volume (Ton); and (5) Exports in Value (1000 US \$). These indicators were chosen to allowed characterize the global cocoa market and its value chain, to compare the situation in STP to the other producing countries and, to show the contribution of agricultural exports of cocoa beans produced by small farmers to economic growth.

## **3. THE COCOA MARKET**

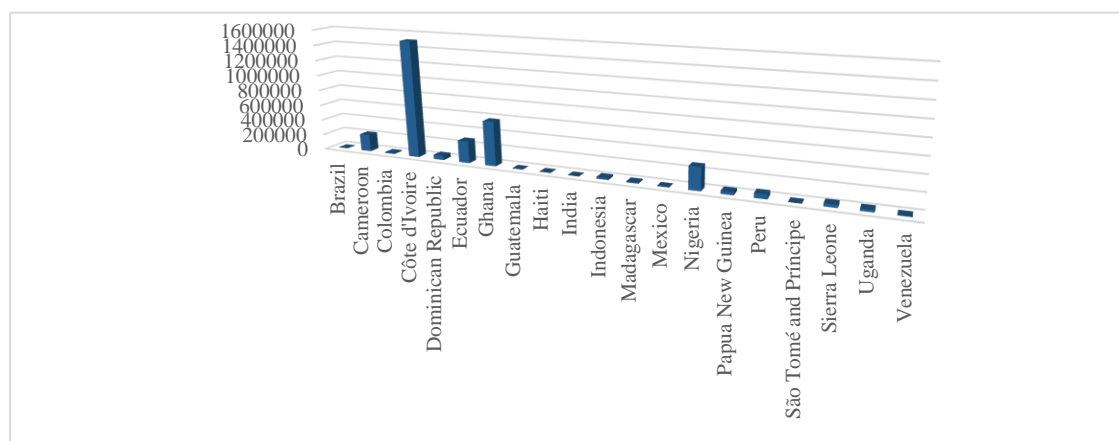
The global production of cocoa beans registered an annual growth of 3% in the period of 2007-2018, reaching a world production of 5.2 million tons in 2017 (FAO, 2021), with a second global boom in the consumption of cocoa and chocolate occurring since 1990 (Squicciarini and Swinnen, 2016). Between 2007 and 2012, the annual growth in production occurred mainly due to the increase in the harvested area and not in productivity or yield per hectare. Favorable climatic conditions and an increase in the production area seem to be related to the verified expansion (Fountain and Huetz-Adams, 2018). According to these authors, climate stability in West Africa, especially after the El Niño phenomenon, policy environment to stimulate cocoa production in Ecuador and Peru, and the increase in cocoa farms in Africa, many of which established in old protected forests and with significant cocoa yields, have clearly contributed

to expanding the cultivated area. Global cocoa production is dominated by Africa, a continent that held, in 2017, 70.4% of global production and, in the last decade, showed an annual growth of the order of 3.8%. The American continent is as follows, with 15.4% of production and an annual increase of 5.3%. Finally, Asia, which has had annual decreases of 1% in the last ten years, contributes only with 13.2% of the global production, and Oceania has a marginal contribution (FAO, 2021). This situation can be visualized in Table 1. Côte d'Ivoire remains during all the years considered, as the main producer, accounting for about 40% of the total production and, consequently, it is the main exporter (FAO, 2021).

Country	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Brazil	201651	202030	218487	235389	248524	253211	256186	273793	278299	213843	235809
Cameroon	212619	229203	235500	264077	240000	268941	275000	269228	274559	289312	295028
Colombia	39904	44740	44740	39534	37202	41670	46739	47732	54798	56785	56808
Côte d'Ivoire	1229908	1382441	1223153	1301347	1511255	1485882	1448992	1613241	1796000	1634000	2034000
Dominican Republic	42154	45291	54994	58334	54279	72225	68021	69913	75500	81246	86599
Ecuador	85891	94300	120581	132099	224163	133323	128446	156216	180192	177551	205955
Ghana	614500	680781	710638	632037	700020	879348	835466	858720	858720	858720	883652
Guatemala	10129	10414	10591	10713	11594	11666	12569	11204	11331	11567	11803
Haiti	8500	8000	8536	9353	10334	11464	12724	14633	15281	13305	14173
India	10180	10560	11820	12900	14400	13000	13000	15000	16000	17000	19000
Indonesia	740006	803593	809583	844626	712200	740500	720900	728400	593331	656817	659776
Madagascar	6465	6465	8000	10000	6500	8000	9000	10865	11535	11327	11010
Mexico	40000	50000	60000	50114	42175	38825	33284	26969	28007	26863	27287
Nigeria	360570	367020	363510	399200	391000	383000	367000	329870	302066	298029	328263
Papua New Guinea	49300	51500	59400	39400	47600	38700	41200	44402	45235	44491	44504
Peru	31387	34003	36803	46613	56499	62492	71175	81651	92592	107922	121825
São Tomé and Príncipe	2800	2000	2500	2600	2219	2230	2617	3200	3000	2813	2778
Sierra Leone	14000	10500	10000	19700	18000	18000	14850	15727	14927	14788	14670
Uganda	10006	13000	15000	15000	18000	16000	20000	27300	26600	29100	31312
Venezuela	18911	20457	20920	20955	22856	31993	29740	22854	24156	23254	23349

*Table 1: Cocoa Total Production by Country (Ton)*  
(Source: Own elaboration with FAO data)

In second place as an exporting country is Ghana, which was surpassed by Indonesia only in 2010 in terms of value exports and in the years 2009 and 2010 in terms of volume exports (Figure 1). STP represents a small proportion both in the total cocoa production, which has fluctuated over the years, remaining in 2017 at the same level as in 2007 (approximately 2800 tons), but showing positive evolution of exports, both in terms of volume and value.



*Figure 1: Cocoa Exports by Country in Volume in 2017 (Ton)*  
(Source: Own elaboration with FAO data)

In 2017, Côte d'Ivoire dominates in all indicators, with the exception of productivity per hectare, where Madagascar holds the first position, but one modest position with regard to exports (Table 2).

In the case of STP, although it has the lowest productivity per hectare of all the countries analyzed, its position as an exporter is superior. A curious piece of evidence is related to the ratio between total cocoa production and exports in volume, for the year 2017, because there are some countries where export volume exceeds total production. This is the case of Ecuador, where volume exports represent 138.2% of total production, Madagascar (114%), Sierra Leone (253.9%) and STP (126%), which shows that there is some error or incongruity with the basic data provided by the different countries.

Area harvested in 2017 (ha)			Productivity in 2017 by há		Total Production in 2017		Exports in Value in 2017 (1000 US\$)		Exports in Volume in 2017 (Ton)	
Ranking	Country	ha	Country	Kg/ha	Country	Ton	Country	Exports (1000 US\$)	Country	Exports(Ton)
1 <sup>a</sup>	Côte d'Ivoire	4147459	Madagascar	8629	Côte d'Ivoire	2034000	Côte d'Ivoire	3505214	Côte d'Ivoire	1510082
2 <sup>a</sup>	Indonesia	1730002	Dominican Republic	5737	Ghana	883652	Ghana	1642052	Ghana	573334
3 <sup>a</sup>	Ghana	1690237	Ghana	5228	Indonésia	659776	Nigeria	598189	Nigeria	287632
4 <sup>a</sup>	Nigeria	1191812	Côte d'Ivoire	4904	Nigeria	328263	Ecuador	589750	Ecuador	284546
5 <sup>a</sup>	Cameroon	729049	Haiti	4858	Cameroon	295028	Cameroon	402956	Cameroon	221667
6 <sup>a</sup>	Brazil	590813	Mexico	4649	Brazil	235809	Peru	148705	Peru	58238
7 <sup>a</sup>	Ecuador	467327	Ecuador	4407	Ecuador	205955	Dominican Republic	135972	Dominican Republic	54891
8 <sup>a</sup>	Dominican Republic	150943	Uganda	4156	Peru	121825	Papua New Guinea	73487	Papua New Guinea	37744
9 <sup>a</sup>	Colombia	146011	Cameroon	4047	Dominican Republic	86599	Sierra Leone	70248	Sierra Leone	37240
10 <sup>a</sup>	Peru	145169	Papua New Guinea	4038	Colombia	56808	Uganda	54208	Uganda	27528
11 <sup>a</sup>	Papua New Guinea	110225	Brazil	3991	Papua New Guinea	44504	Indonesia	53537	Indonesia	23594
12 <sup>a</sup>	India	83000	Colombia	3891	Uganda	31312	Colombia	27326	Madagascar	12555
13 <sup>a</sup>	Uganda	75338	Indonesia	3814	Mexico	27287	Madagascar	22785	Colombia	11876
14 <sup>a</sup>	Venezuela	62119	Venezuela	3759	Venezuela	23349	Venezuela	22290	Venezuela	8268
15 <sup>a</sup>	Mexico	58690	Sierra Leone	3618	India	19000	São Tomé and Príncipe	8371	São Tomé and Príncipe	3501
16 <sup>a</sup>	Sierra Leone	40549	Nigeria	2754	Sierra Leone	14670	Haiti	5473	Haiti	2512
17 <sup>a</sup>	Haiti	29173	Guatemala	2711	Haiti	14173	Brazil	2936	Mexico	1032
18 <sup>a</sup>	São Tomé and Príncipe	26020	India	2289	Guatemala	11803	Mexico	2811	Brazil	754
19 <sup>a</sup>	Madagascar	12759	Peru	1067	Madagascar	11010	Guatemala	1901	Guatemala	149
20 <sup>a</sup>	Guatemala	4354	São Tomé and Príncipe	1067	São Tomé and Príncipe	2778	India	362	India	94

*Table 2: Indicators by Country in Year 2017*

*(Source: Own elaboration with FAO data)*

World imports of cocoa and its processed products reached US \$ 9.34 billion in 2017, with Netherlands (25%), United States (13%), Germany (8.4%) and Belgium-Luxembourg (8.4%) being the main importers. The products in greatest demand were chocolate and other foods containing cocoa (57% of imports), raw or partially roasted cocoa beans (20% and cocoa powder without added sugar or other sweetener (8%) (OEC, 2020). As an agricultural commodity, the price of cocoa beans is volatile (Díaz-Montenegro, 2019; Utepi, 2007). Factors such as changes and climatic events, pests and diseases, fluctuations in production cycles, especially in large producing countries, variations in cocoa processors' inventories or changes in consumer markets influence the price. In the particular excess supply causes prices to fall and, at the same time, encourage farmers to harvest intensively and also to replace cocoa with other crops, increasing even more the saturation of the cocoa bean market and causing an even steeper drop in prices (Fountain and Huetz-Adams, 2018). As a result, there is a future shortage of grains, leading to price increases. Since supply in this market reacts slowly to price changes or demand pressures, when supply exceeds supply and prices increase, farmers have incentives to plant new trees. However, due to the length of the biological cycle, they take several years to reach their maximum productive performance, so farmers receive little benefit from the price increase (Díaz-Montenegro, 2019). The observation of international price in real terms at 2010 values for cocoa as a commodity shows price instability in the period considered (2007-2017). There was a rise until 2010 and between 2013 and 2016, but a decline between 2011 and 2012 and from 2016, representing a drop of approximately one third in 2017 (Figure 2). The price drops observed seem to be linked to the excess supply of cocoa and to the stagnation of demand in emerging economies (Brazil and Russia), due to the economic crisis and to the decline in the consumption of chocolate in the USA, China and India (Díaz-Montenegro, 2019; Fountain and Huetz-Adams, 2018; ICCO, 2016; World Bank, 2019).

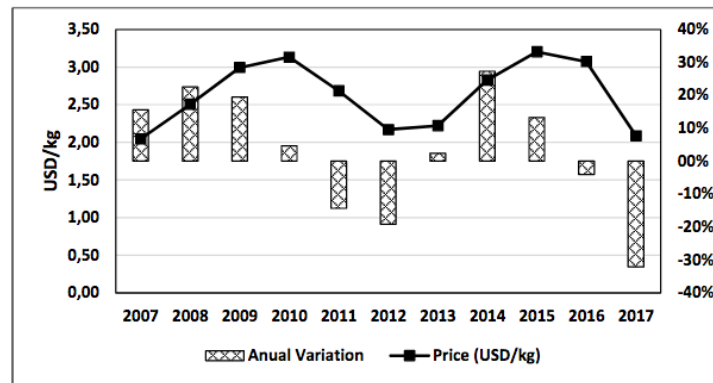


Figure 2: Real Cocoa Price (2010 value)  
(Source: Díaz-Montenegro (2019); World Bank (2019))

The demand for chocolate is elastic to price variations, but there are consumer segments focused on quality and brand (Squicciarini and Swinnen, 2016). Although the world consumption of cocoa has been decreasing in the last decade, chocolate consumers, especially in developed countries, are seen as fundamental to induce changes in attitudes towards sustainability. This situation is due to the growing interest in sustainable and organic products, the requirement for certification and authenticity and guarantee that does not harm the environment, and to the not exploitation of the workforce, which ensures fair trade (García-Herrero et al., 2019). If the fall in international cocoa prices persists, especially in the current state of the world pandemic, this could induce to a drop in the price of finished cocoa and chocolate products, which could stimulate consumption. For ICCO (2016), there is always a time lag between the reduction in the price of cocoa beans and its effects on the price to the consumer (ICCO, 2016). Sensory quality, together with labelling and information on the origin and method of production and processing of cocoa, are also important elements for their acceptance, appreciation and preference by the consumer (Silva et al., 2017). Tools that help to make cocoa traceable and assess the geographical origin of the beans used in the production of chocolate are also seen as essential (Acierno et al., 2017).

### 3.1. The Organic Cocoa Market

Despite the fact that the organic cocoa market represents only 0.5% of production, being a very small share of the total world cocoa market, the demand for this product has been increasing, with in some situations an inability of supply to meet demand for organic cocoa market. For this reason, and despite the social, environmental and economic problems faced by producers and countries, and the distance between producers and consumers who can value the product and its way of production, farmers have been sacrificing their few resources to produce organic cocoa, mainly in the least developed countries (García-Herrero et al., 2019). The main producer of organic cocoa is the Dominican Republic, with a market share of around 70%. Peru, Mexico and Ecuador hold about 20%, with the remaining 10% distributed between Ghana, Uganda, Bolivia and Brazil (ICCO, 2018). The estimate of this source is that the African continent will be able to produce about 9% of the organic cocoa market by 2022 although, to that end, it must plan, organize and certify production so that cocoa does not have to be marketed as conventional due to difficulties in market access. The organic cocoa market encompasses, in general, products such as cocoa powder, paste, butter and grains, which are used in confectionery, bakery, functional foods, healthy drinks, homemade food, pharmaceuticals, ointments and personal hygiene, among other possibilities. In the food industry, the main ingredient from cocoa and the driver of organic cocoa production is chocolate. Their demand by consumers results from the growing awareness of health and, consequently, the demand for premium



organic chocolate, organic ingredients in functional foods, beverages and personal hygiene products. However, there is a lack of information and market links that allow small organic cocoa producers to supply high-demand regions such as North America, Western Europe, Japan and Asia-Pacific (except Japan), where there is an emerging cocoa market potential. Some emerging markets, including those in growing African countries, have also been linked to the demand for organic cocoa (EAL, 2020). It is expected that there will be significant increases in the demand for chocolate in emerging markets while in traditional markets with developed economies, the trend will go towards the preference for healthier and first quality chocolate products, expanding the range of prices offered for these products (ICCO, 2018). The price of organic cocoa, although it is, like the conventional, determined by the balance between world supply and demand, and pay attention to the quality and flavor, it is always higher than that of conventional cocoa (Prazeres, 2018).

### 3.2. The Global Cocoa-Chocolate Value Chain

The global cocoa-chocolate value chain is exposed in Figure 3. Its analysis shows, on the one hand, a large spatial distance between production, which occurs in a fragmented way in 5.5 million small rural properties of 1 to 3 hectares, in Africa, Latin America and Asia and consumers and, on the other hand, a governance system where few companies control the segments of consumption and the stages of cocoa processing and chocolate manufacture, where the value is created.

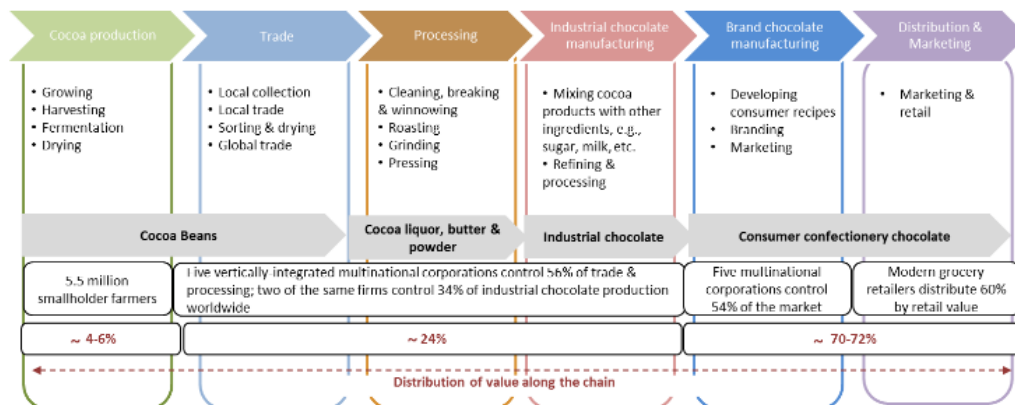


Figure 3: The Cocoa-Chocolate Value Chain  
(Source: Abdulsamad et al. (2015); Díaz-Montenegro (2019))

Some of the large companies involved in the global cocoa-chocolate value chain develop their activities simultaneously in the consumer markets, where they control high-value functions arising from the industrial manufacture of chocolate and branding, and in the intermediate processing markets, dominating the global supply chain for raw materials from cocoa and operating in markets of producing and consuming countries (Abdulsamad et al., 2015). According to these authors, the five leading companies in the consumer markets (Mondelez International 15%; Mars Inc. 14%; Nestlé 12%; Ferrero 8%; and Hershey Co. 7%) are owners of well-known brands. They control high-value functions related to the manufacture of chocolate and the development and marketing of brands have great purchasing and negotiating power (Abdulsamad et al., 2015). Three of these leading companies dominate the global supply chains, being vertically integrated, they operate from the rural areas of the producing countries to the main ports in Europe and North America, where the advanced processing facilities are located. Barry Callebaut (23%), Cargill (15.3%) and ADM (12.7%) are examples of these vertically integrated supply chains that control approximately half of processed cocoa



worldwide (Abdulsamad et al., 2015). Upstream of the cocoa-chocolate value chain are the approximately five million small-scale farmers, ranging from one to three hectares of land (ICCO, 2016), which account for 90% of the global cocoa harvest (Purcell et al., 2018). They are a link in the value chain with less negotiating weight, more fragmented and geographically atomized and without financial capacity to face the risks resulting from price volatility (Fountain and Huetz-Adams, 2018). Furthermore, they are the most dependent on local commerce and their respective dealers, commission agents or purchasing agents from the international chocolate industries, who press downward prices (Abdulsamad et al., 2015). In addition, the processing (grinding) of cocoa beans is commonly carried out in importing countries, (especially in Holland, Germany and the United States), which owns approximately one third of the world mills and add the value corresponding to this operation (ICCO, 2016). The asymmetry in the power relations of the cocoa-chocolate value chain explains the formation and transmission of prices along the chain. In general, retail prices increase when the price of cocoa beans goes up, but they react more slowly when prices for cocoa beans go down. Thus, the fall in the prices of cocoa beans has different consequences for the different links in the chain. It will immediately and negatively affect farmers' incomes, but the rest of the players in the value chain can even increase their profit margins, albeit temporarily (Fountain and Huetz-Adams, 2018; 2020). Table 3 shows the differences in the distribution of value along the chain between the production activities carried out by the cocoa-producing countries (6.6%), transportation and marketing (6.3%), processing (7.6%), manufacturing (35.2%) and retail sales (44.2%).

Distribution of Value	Sales (\$)	Purchases(\$)	Value Added (\$)	Profit (\$)	Final Sale Price (%)
Farmers' Income (Weighted)	1,874	664	1,210	1,210	6,6
Ground transportation	1,971	1,874	97	Not available	0,5
Taxes   Marketing <i>Board</i>	2,745	1,971	774	Not available	4,2
International Shipping	2,793	2,745	48	Not available	0,3
Cost per Arrival Fee	2,993	2,793	201	Not available	1,1
International Merchants   Traders	3,038	2,993	45	15	0,2
Processors and Crushers	4,434	3,038	1,395	211	7,6
Manufacturer (per ton of cocoa sold)	10,858	4,434	6,425	870	35,2
Retail and Taxes	18,917	10,858	8,058	473	44,2

*Table 3: Distribution of Value in Cocoa-Chocolate Chain*  
(Source: Fountain and Huetz-Adams (2018); Díaz-Montenegro (2019))

Compared to the conventional cocoa value chain that of organic cocoa is not very different although, in some cases, it may be relatively shorter and more transparent, encompassing only producers, their associations or cooperatives and international customers. There are also some cocoa farmers who individually produce and process cocoa and sell it to traders and intermediaries of the large international companies that operate locally, receiving a premium price in relation to the market (Prazeres, 2018). However, because the access of cocoa farmers to this market is difficult, it is common to associate with cooperatives or associations of producers and, through these organizations, carry out the marketing of cocoa, with the required volume and quality (Prazeres, 2018). What can also happen is that producer organizations are held hostage by a major international negotiator and have few possibilities to set prices (Prazeres, 2018; Lwesya, 2018).

#### 4. THE ORGANIC COCOA VALUE CHAIN IN STP

The organic cocoa value chain in STP involves five main links - cocoa production, supply and marketing, powder and butter processing, manufacturing and distribution of industrial chocolate and retailing to final consumers (Figure 4). The main stakeholders include cocoa producers, two cooperatives (CECAB and CECAC11), certification companies, cocoa traders,

processors (associations or companies Satocão and Diogo Vaz, with their own production), chocolate manufacturers (national or international industry) and retailers. Despite its large size, the international cocoa market is very concentrated, with few players representing a significant proportion of the market (Prazeres, 2018).

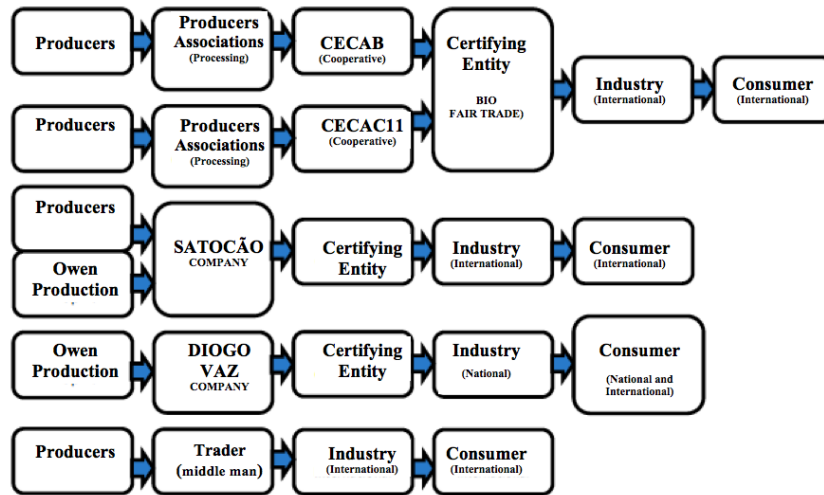


Figure 4: Organic Cocoa Value Chain in STP  
(Source: Prazeres (2018))

The production link is very atomized, involving approximately four thousand farmers distributed by two cooperatives, CECAB, which brings together the largest proportion of producers and CECAC 11, with about half of CECAB's cooperatives (Table 4), where the average per capita area is 2.1 hectares at CECAB and 1.6 hectares at CECAC11. Both cooperatives are financially supported by IFAD - Fund for the Development of Agriculture and the Project for Small Commercial Agriculture (PAPAC) and other several non-governmental organizations, such as ADAPPA (Action for Agricultural Development and Environmental Protection), the ADIL Zatona, FENAPA (National Federation of Small Farmers) and the CIAT (Center for Agronomic and Technological Research). Each of the cooperatives brings together several associations that receive the cocoa seed from the farmers who integrate them, organized by geographical areas (Prazeres, 2018). According to this author, the training of farmers and motivation strategies to guarantee production with the levels and quality required by the market, is carried out by the cooperatives that provide training to the technicians of the associations that integrate them and these, later, called “sociotechnicians” provide training and technical support to their producers, being paid for this task. These sociotechnicians replace the role of the extension services that belonged to the state.

Cooperative	Producers (N°)	Total Area (ha)	Production (Kg)	Average per-capita Area (ha)	Productivity (Kg/ha)	Cocoa Price (Dbs/Kg dry)	Price FOB (€/Ton)
CECAB	2139	4560	965774	2,1	212	46550	2540
CECAC11	1135	1800	302000	1,6	168	5000	2816

Table 4: Organic Producers by Cooperative in STP  
(Source: Prazeres (2018))

In addition to strictly agricultural work, cooperatives carry out other actions, such as socio-recreational activities in the communities, inviting specialists who contribute to raising awareness among farmers on various topics (domestic violence, gender equality, and alcohol consumption - a problem that affects 10 to 10 years). 15% of the members of the cooperatives - sexually transmitted diseases), the cooperatives finance small social works in the communities and provide support to the neediest (medicines, glasses, coffins).

Overall, the two cooperatives hold 90% of the country's organic cocoa producers and, in 2015, approximately 1300 tons of production in total. The fact that the vast majority of producers are formally integrated into a cooperative, could mean a greater capacity to negotiate with intermediaries and suppliers of goods and services and to sell cocoa directly, benefiting from its sale in value markets. However, this is not the case and cocoa farmers, especially the smallest ones, face several problems, among which, aging plantations, low renewal rate, lack of improved varieties and technical assistance. This situation highlights the need to rethink the organic cocoa value chain, through an integration model that encourages the formation of horizontal and vertical links, which link producers, cooperatives and other actors in the chain and guarantee the origin of cocoa through a legal figure such as the Protected Geographical Indication (Prazeres and Lucas, 2020). Of the 10% individual producers, not members of the cooperatives, the smaller ones deliver the cocoa beans to a buyer / dealer / intermediary who may be an employee or representative of a large company or an export agent. Of the larger private producers, of note Sotocao, in partnership with a chocolate manufacturer in Switzerland and Kennyson in Roça Diogo Vaz, with a chocolate factory and a store in the country and two more stores abroad, one in Portugal and another in France. Organic cocoa is restricted to the island of São Tomé. In the case of the island of Príncipe, the cocoa product is not certified as organic, except for incipient quantities produced in the Roças Paciência and Sundry, certified by the Portuguese company Agricert. Roça Fundão buys from small producers about half of the 75 tonnes of total cocoa production (not certified), the remainder being bought by chocolate producer Cláudio Corallo, who also gives his name to the chocolate brand that produces chocolate in the city of São Thomas. The value chain consists of approximately 20 intermediaries or dealers (buyers and local agents or wholesalers) who are the main links between individual private producers and cooperatives, with industry, processing centres, brokers and exporters. These fulfil various functions such as granting credit to small cocoa farmers, providing basic products (rice, corn, sugar) or paying in cash. Intermediaries often operate on the credit of large exporters and, in this situation, can lend money to cooperatives, with which they reach pre-harvest agreements. They work with volume targets, demanding strict compliance and, in many cases, there are reports of the use of irregular commercial practices, such as errors in weighing the volume transacted with payment accordingly, inaccurate price information or quality complaints and uniformity of cocoa beans. All stakeholders in the value chain, from export traders (intermediaries), to those in charge of public organizations, cooperatives, development organizations, farmers and specialists, realize the importance of the quality of cocoa beans and the certification process as biological, for its price and final value. One of the interviewees, from a public institution, affirms the relevance of organic cocoa for environmental, economic and social sustainability. Another, from one of the cooperatives, highlighted the specificity of the São Tomé ecosystem for the production of high quality organic fine cocoa. The certification is carried out by a qualified entity, qualified to do so and independent from all other players in the value chain, it starts with planting, visiting lots and obtaining information on density, age, health status, location (for example, there is no certification of plantations close to workshops and backyards), status of maintenance of the lot, so that it is possible to make a projection of the production to be obtained. If the lot is in a condition to be certified, the owner is asked about the cultural operations it carries out and the quantity produced.

## 5. IMPLICATIONS FOR SMALL COCOA PRODUCERS

In a global context of scarcity of resources, the relative inability of cocoa production to satisfy the growing demand and the attention given to its sustainability, a balance must be found between production and profitability, with respect for the environment and benefits for small cocoa producers and for society (García-Herrero et al., 2019).

Added concerns of producer countries about price volatility and the dependence of few buyers, farmers' organizations weak or with little bargaining power, the loss of soil fertility and biodiversity, and the different understanding and interest in the development of sustainable cocoa by different links in the chain (Mithöfer et al., 2017). Also due to the existence of gaps between the standards and practices of sustainability and governance of the cocoa value chain (Moreno-Miranda et al., 2019) and the distance between the geographically highly atomized producers and the markets consumption (Prazeres, 2018). Development policies and programs in many countries have focused on expanding cocoa production and increasing productivity, regardless of the needs of small farmers for economically viable agricultural systems and market structures, which results in little bargaining power and low levels of income and well-being for producers (Mithöfer et al., 2017). In addition to increasing production and productivity, improving the livelihood strategies of small cocoa producers may involve other alternative methods, such as agro-cultural practices in land use and other resources, modes of production (for example, biological) and changes in the fermentation, transformation and commercialization processes (Salazara et al., 2018). Innovations and increased investments in sustainability in the cocoa chain, which are not just incremental changes, but help sustain transformation and industry and improve the rights, representation and quality of life of small producers, are essential (Nelson and Phillips, 2018), among these innovations, public-private partnerships stand out when they create governance rules that improve yields and services to producers, optimize productivity and, at the same time, limit environmental impacts (Ingram et al., 2018). Increasing the income of cocoa farmers and reducing poverty in rural areas is also achieved with the certification (Lwesya, 2018) the creation of Protected Designations of Origin and Protected Geographical Indication (Moreno-Miranda et al., 2019; Prazeres, 2018; Prazeres and Lucas, 2020) and quality improvements (Effendy et al., 2019). The governance of the global cocoa value chain, especially in the further downstream links, concentrated in a few agents, has created asymmetric power relations that block the distribution and transmission of upstream value for small producers. The share of the amount retained by the cocoa-producing countries was reduced by more than 50% in the period between 1970 and 1990. Producers in these countries (mainly those with a small farm size) had, at the same time, to bear the fall in market prices and, higher costs and greater risks, production due to the effects of climate change, market driven by the dynamics of global markets price volatility and, institutional, due to its inefficient or inadequate functioning. The worsening social and economic conditions in producing countries as a result of these power imbalances have triggered a proliferation of private governance responses, such as industry behavioural codes, certification standards and schemes or multistakeholder initiatives and, more recently, governance mechanisms public and regulatory (Abdulsamad et al., 2015). Different standards and certification schemes, with market-based approaches and the development of cocoa brands, can be included in the private governance processes that led to the expansion of supply. However, there has also been a drop in demand resulting from economic crises and other diverse contexts, such as the reduction in sugar and fat consumption or the appetite for chocolate (Abdulsamad et al., 2015; Fountain and Huetz-Adams, 2018; ICCO, 2016; World Bank, 2019). Even in these cases, there is an asymmetrical distribution of value along the chain, with the portion of the price paid by the consumer not reverting to certified cocoa producers (such as organic ones) very different from that considered for conventional cocoa farmers (Abdulsamad et al., 2015). Public governance mechanisms have the advantage of seeking a balance between the growth of the cocoa sector and the improvement of farmers' livelihoods (Abdulsamad et al., 2015). In the specific case of STP, the option taken by the state was to convert all cocoa plantations into organic cocoa. Currently, it can be said that all cocoa is produced in an organic way, promoting government support to producers and their cooperatives.

Most producers who sell their product to cooperatives receive a different price compared to the price of conventional cocoa, and the certification costs are borne by the cooperatives. The main problem for organic cocoa producers is scale and pressure to use land with alternative crops or activities, which are more profitable. There is a tension between the allocation of land for cocoa production and for other productive activities and there is also real estate pressure. The decision of farmers to plant cocoa or another crop is influenced by external factors, such as market prices and, also, by internal factors such as physical, human or natural capital that farmers rely on. The way in which these factors affect the decision of small cocoa producers in STP has not yet been studied, requiring a thorough investigation in order to assess the impact and provide solutions. Support for organic production, although it is mostly done by the state, through cooperatives and respective associations, is not exclusive to this, with investments from the private sector (such as Satocão and Diogo Vaz), focusing on improving the fermentation process production systems, including commercial scale and increased market penetration. Whether through private or public governance, associating small producers with specialized value chains is an opportunity to alleviate poverty and improve their quality of life.

## 6. FINAL REMARKS

There are several tensions between the different links in the cocoa value chain. In terms of the international market, these derive from the existing asymmetries between production, fragmented in about 5 million producers, the vast majority with less than 2 hectares of land and the consumer market, controlled by five large multinational companies and, from the small portion of value passed on to producers. At the level of STP and, despite measures to support organic production as a valuable alternative to the country's development strategy, imbalances in the value chain persist that compromise the livelihoods of small producers responsible for most of production exported and the sustainability of the ecosystem. Low productivity and the effects of climate change, combined with the drop in world prices and / or the lack of premium prices in the domestic market, are the main responsible for this situation. Even for the many producers who sell organic cocoa through cooperatives and are able to receive payments at higher prices, it is not entirely clear whether this strategy allows them to significantly improve their livelihoods, a situation that needs to be researched. Cooperatives and private companies have focused on technical solutions linked to improving agricultural practices, quality and market prices, with little information on price transmission and governance in the value chain, where the lack of bargaining power by contrasted with the concentration of power in other links in the chain. Addressing these issues from a full perspective would also require taking into account producers' livelihood conditions (e.g. local infrastructure, including schools, health, access to markets) to understand how cocoa production can contribute to its improvement.

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## LITERATURE:

1. Abdulsamad, A., Frederick, S., Guinn, A., & Gereffi, G. (2015). Pro-Poor Development and Power Asymmetries in Global Value Chains. <https://doi.org/10.13140/RG.2.2.32872.88323>.
2. Acierno, V., Alewijn, M., Zomer, P. & van Ruth, S. M. (2017). Making cocoa origin traceable: Fingerprints of chocolates using Flow Infusion - Electro Spray Ionization - Mass Spectrometry. *Food Control*, 81: 245-252. <https://doi.org/10.1016/j.foodcont.2017.10.002>.

3. ANEME - Associação Nacional das Empresas Metalúrgicas e Eletromecânicas (2018). Estudo de Levantamento e Caracterização das Empresas Industriais de São Tomé e Príncipe. Estudo São Tomé e Príncipe. Retrieved from: [https://www.aneme.pt/site/wp-content/uploads/2018/09/Estudo\\_S%C3%A3o-Tom%C3%A9-Pr%C3%ADncipe-2018\\_VF-CORRIGIDA.pdf](https://www.aneme.pt/site/wp-content/uploads/2018/09/Estudo_S%C3%A3o-Tom%C3%A9-Pr%C3%ADncipe-2018_VF-CORRIGIDA.pdf).
4. Blare, T., & Useche, P. (2013). Competing objectives of smallholder producers in developing countries: examining cacao production in Northern Ecuador. *Environmental Economics*, 4(1): 71–79. Retrieved from from: [file:///Users/raquellucas/Downloads/ee\\_2013\\_01\\_Useche.pdf](file:///Users/raquellucas/Downloads/ee_2013_01_Useche.pdf).
5. Díaz-Montenegro, J. (2019). Livelihood strategies of cacao producers in Ecuador: Effects of national policies to support cacao farmers and specialty cacao landraces (PhD Program: Sustainability). Universitat Politècnica de Catalunya Institut de Sostenibilitat, Barcelona. Retrieved from: <https://upcommons.upc.edu/bitstream/handle/2117/170436/TJDM1de1.pdf>.
6. Díaz-Montenegro, J., Varela, E., & Gil, J. M. (2018). Livelihood strategies of cacao producers in Ecuador: Effects of national policies to support cacao farmers and specialty cacao landraces. *Journal of Rural Studies*, 63: 141-156. <https://doi.org/10.1016/j.jrurstud.2018.08.004>.
7. EAL-EuroAfriLink (2020). Organic Cocoa market: Global challenges & opportunities. Retrieved from: <http://euroafrilink.com/second-blog/>.
8. Effendy, D., Pratama M.F., Rauf, R.A., Antara M., Basir-Cyio, M. & Mahfudz (2019). Factors influencing the efficiency of cocoa farms: A study to increase income in rural Indonesia. *PLoS ONE* 14(4): e0214569. <https://doi.org/10.1371/journal.pone.0214569>.
9. Eghbal, M. (2018). Global Chocolate Industry: From Bean to Bar. Euromonitor International. Retrieved from: <https://blog.euromonitor.com/global-chocolate-industry>.
10. FAO (2021). Faostat. Selected Indicators. Retrieved from: <http://www.fao.org/faostat/en/#country>
11. Fountain, A. C., & Huetz-Adams, F. (2020). Cocoa Barometer 2020. USA Edition, 118 p. Retrieved from: <https://www.voicenetwork.eu/wp-content/uploads/2020/12/2020-Cocoa-Barometer.pdf>.
12. Fountain, A., & Huetz-Adams, F. (2018). Cocoa Barometer 2018. USA Edition, pp. 1–72. Retrieved from: <https://www.voicenetwork.eu/wp-content/uploads/2019/07/2018-Cocoa-Barometer.pdf>.
13. Galarza, J. A. V. (2012). Smallholders and “fine” cocoa’s supply chain: designing an experiment on social dilemmas in cocoa “quality manipulation” (Master Thesis). Universiteit Gent. Retrieved from: [https://lib.ugent.be/fulltxt/RUG01/001/894/545/RUG01-001894545\\_2012\\_0001\\_AC.pdf](https://lib.ugent.be/fulltxt/RUG01/001/894/545/RUG01-001894545_2012_0001_AC.pdf).
14. García-Herrero, L., De Menna, F., Vittuari, M. (2019). Sustainability concerns and practices in the chocolate life cycle: Integrating consumers’ perceptions and experts’ knowledge. *Sustainable Production and Consumption* 20: 117–127. <https://www.sciencedirect.com/science/article/pii/S2352550919300582>.
15. ICCO - International Cocoa Organization (2016). Quarterly Bulletin of Cocoa Statistics - August 2016. Quarterly Bulletin of Cocoa Statistics, XLIII(1). Retrieved from: <https://www.icco.org/about-us/icco-news/324-quarterly-bulletin-of-cocoa-statistics-august-2016.html>.
16. ICCO - International Cocoa Organization (2018). Quarterly Bulletin of Cocoa Statistics, Vol. XLIV - No. 1. Retrieved from: <https://www.icco.org/about-us/icco-news/389-may-2018-quarterly-bulletin-of-cocoa-statistics.html>.

17. Ingram, V., van Rijn, F., Waarts, Y. & Gilhuis, H. (2018). The Impacts of Cocoa Sustainability Initiatives in West Africa. *Sustainability* 10 42-49.  
<https://doi.org/10.3390/su10114249>.
18. Lwesya, F. (2018). Towards Organic Agriculture: Assessing the Dynamics of Production and Exporting of Organic Cocoa in Tanzania. *Academic Journal of Economic Studies*, Vol. 4 (3): 25–31. <https://ideas.repec.org/a/khe/scajes/v4y2018i3p25-31.html>.
19. Mithöfer, D., Roshetko, J. M., Donovan, J. A., Nathalie, E., Robiglio, V., Wau, D., Sonwa, D. J. & Blare, T. (2017). Unpacking ‘sustainable’ cocoa: do sustainability standards, development projects and policies address producer concerns in Indonesia, Cameroon and Peru?, *International Journal of Biodiversity Science, Ecosystem Services & Management*, 13 (1): 444-469. <https://doi.org/10.1080/21513732.2018.1432691>.
20. Moreno-Miranda, C., Ordán, J., Moreno, R., Moreno, P. & Solis, J. (2019). Protected Designation of Origin and Sustainability Characterization: The Case of PDO Cocoa Arriba. *Agriculture* 9(10): 229. <https://doi.org/10.3390/agriculture9100229>.
21. Nelson, V. & Phillips, D. (2018). Sector, Landscape or Rural Transformations? Exploring the Limits and Potential of Agricultural Sustainability Initiatives through a Cocoa Case Study. *Business Strategy and the Environment* 27: 252–262.  
<https://doi.org/10.1002/bse.2014>.
22. OEC- The Observatory of Economic Complexity (2019). Cocoa beans trade. Retrieved from: <https://oec.world/en/profile/hs92/cocoa-beans?redirect=true>.
23. Prazeres, I. C. & Lucas, M. R. (2020). Repensar a cadeia de valor do cacau biológico de São Tomé e Príncipe. *Revista de Ciências Agrárias*, 43(Especial).  
<https://doi.org/10.19084/rca.19045>.
24. Prazeres, I. C. (2018). Estratégia de Marketing e Criação de Valor do Cacau Biológico de São Tomé e Príncipe no Mercado Internacional (Trabalho de Projeto do Mestrado em Gestão, especialização em Marketing), Escola de Ciências Sociais, Departamento de Gestão, Universidade de Évora. Retrieved from: <http://hdl.handle.net/10174/25358>.
25. Purcell, T., Martinez-Esguerra, E., & Fernandez, N. (2018). The Value of Rents: Global Commodity Chains and Small Cocoa Producers in Ecuador. *Antipode*, 50(3), 641–661.  
<https://doi.org/10.1111/anti.12380>.
26. Salazara, O. V., Ramos-Martín, J. & Lomasc, P. L. (2018). Livelihood sustainability assessment of coffee and cocoa producers in the Amazon region of Ecuador using household types. *Journal of Rural Studies* 62:1-9.  
<https://doi.org/10.1016/j.jrurstud.2018.06.004>.
27. Silva, A. R. A., Bioto, A. S., Efraim, P. & Queiroz, G. C. (2017). Impact of sustainability labeling in the perception of sensory quality and purchase intention of chocolate consumers. *Journal of Cleaner Production*, 141: 11-21. <http://dx.doi.org/10.1016/j.jclepro.2016.09.024>.
28. Squicciarini, M. P., & Swinnen, J. (2016). The economics of chocolate. In. M. P. Squicciarini & J. Swinnen (Eds.). New York: Oxford University Press.
29. Utepi - Unidad Técnica de Estudios para la Industria (2007). Estudio Agroindustrial en el Ecuador: Competitividad de la Cadena de Valor y Perspectivas de Mercado. Programa Integrado entre el Ministerio de Industrias y Competitividad y la Organización de las Naciones Unidas para el Desarrollo Industrial, Quito – Ecuador. Retrieved from: [https://www.unido.org/sites/default/files/2007-11/71789\\_TCB\\_No.16.Cacao\\_Estudio\\_Agroindustrial\\_en\\_el\\_Ecuador\\_0.pdf](https://www.unido.org/sites/default/files/2007-11/71789_TCB_No.16.Cacao_Estudio_Agroindustrial_en_el_Ecuador_0.pdf).
30. Voora, V., Bermúdez, S., & Larrea, C. (2019). Global Market Report: Cocoa. Sustainable Commodities Marketplace Series 2019. IISD-The International Institute for Sustainable Development. Retrieved from: <https://www.iisd.org/system/files/publications/ssi-global-market-report-cocoa.pdf>.

31. World Bank (2019). World Bank Commodity Price Data. Retrieved from: <http://www.worldbank.org/en/research/commodity-markets>.



## DESIGNING A DIGITAL EDUCATION ECOSYSTEM

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### ABSTRACT

*The aim of this scientific publication is to examine the challenges for the digital education ecosystem in a crisis situation caused by COVID 19. In the current aggravated situation, with introduced movement restrictions around the world, the most important step to instant and high-quality adaptation of the educational system is to make it flexible. This will allow gaining complete and necessary knowledge, introducing the maximum variety of forms and methods of teaching and the technical perfection of teaching equipment. The modern trend of digital transformation of the branches of the socio-economic system determines the urgent need for the operational adaptation of the educational environment to the professional and additional needs of society, technical modernization and the priorities of social and economic development. A change in the management of education is needed in order to find solutions for the modernization of education in a digital environment in which the quality of education is maintained at a level corresponding to the socio-economic processes.*

**Keywords:** *Digital education ecosystem, COVID 19, Social policy, Learning environment*

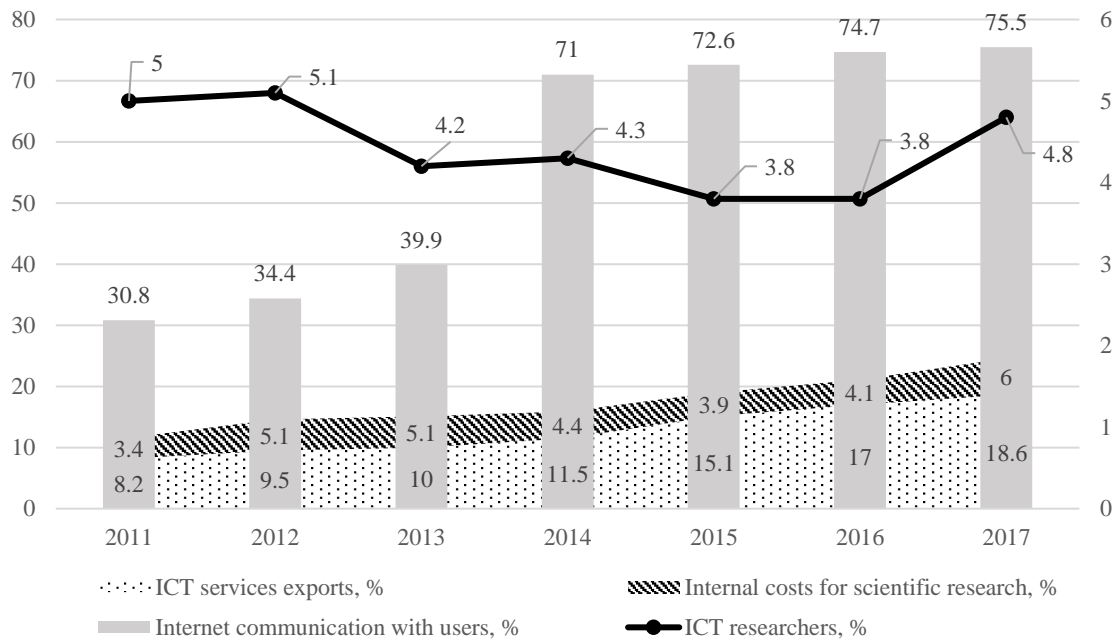
### 1. INTRODUCTION

The model of a modern society is a “digital society” based on the widespread use of information and communication technologies. Information is of utmost importance. However, “unprocessed”, “unprepared” information is not valuable, but quite the opposite – it causes great damage (economic, technical, psychological, political and others). First of all, this concerns young people, who are exposed to the influence of “harmful factors” (information messages, appeals) more than other categories of the population. Taking into account the recent events, the spread of the Covid-19 pandemic in particular, it is necessary to create favourable conditions for the students of schools and universities to continue their education and to implement self-education in a new format, known as distance learning. At the same time, the goal of education must remain the same – quality of education. The prevailing share of full-time education in the modern education system, our mentality, regional peculiarities of development and the needs of young people, above all, complicate this process. In the current aggravated situation, with introduced movement restrictions around the world, the most important step to instant and high-quality adaptation of the educational system is to make it flexible. This will allow gaining complete and necessary knowledge, introducing the maximum variety of forms and methods of teaching and the technical perfection of teaching equipment. The modern trend of digital transformation of the branches of the socio-economic system determines the urgent need for the operational adaptation of the educational environment to the professional and additional needs of society, technical modernization and the priorities of social and economic development (Safuanov, Lehmus, Kolganov, 2019; Strekalova, 2019a).

## 2. DESIGNING A DIGITAL EDUCATION ECOSYSTEM

In the Republic of Belarus, a socio-economic model of the digital economy is being actively implemented, which is associated with an increase in the export of information and communication technologies, internal costs for scientific research and the use of Internet communication with users (Fig. 1).

*Figure 1: Dynamics of specific value indicators of the digital economy development in the Republic of Belarus for 2011-2017, %*



*Note: personal work based on the Information Society in the Republic of Belarus: Stat. data book / ed. by I.V. Medvedeva (2019c).*

The education sector, along with other sectors of economy, is in need of finding relevant approaches to the management, organization and implementation of the educational process based on developing digital technologies (Averina, et al., 2018). The estimates of the Institute for Statistical Studies and Economics of Knowledge at the Higher School of Economics (ISSEK HSE) show that internal costs for the development of the digital economy in Russia amount to 3.6% of GDP, 0.03% of which is the higher education sector. The share of organizations using software in the field of education is growing rapidly: electronic library systems, electronic versions of textbooks, reference books, computer training programmes, electronic document and records management systems, special programmes for scientific research and virtual simulators (Klimuk, Lazdins, 2019b; Indicators of the Digital Economy, 2019d). ISSEK HSE experts have distinguished 7 goals for digitalization of education:

- Development of material infrastructure. This includes the construction of data centres, the emergence of new communication channels and devices for using digital educational and methodological materials.
- Implementation of digital programmes. In other words, the creation, testing and application of teaching materials using machine learning technologies, artificial intelligence and so on.
- Development of online learning. Gradual decline in usage of traditional paper media.
- Development of new learning management systems (LMS). In distance education, LMS refers to course administration and monitoring programmes. Such applications provide students with equal and free access to knowledge, as well as flexibility in learning.
- Development of a system of universal identification of a student.

- Creation of educational institution models. To understand how school and university education should develop in terms of technology, we need examples of how they should ideally work: using new LMS, Industry 4.0 tools and devices and so on.
- Improvement of the digital skills of teachers (2020a).

As the Chinese billionaire, the founder of Alibaba, Jack Ma, noted: “If we do not change the way we teach, after 30 years we will be in trouble” (Kovalev, Golovenchik, 2018a). As a possible solution to the problem of updating and creating a variety of forms and methods of teaching in order to maintain and improve the quality of education, we propose to create a distance information and educational environment, built on a modular principle. By a module we mean the competence that the user (system participant) needs (for example, “studying the principles of blockchain technology,” “studying the work of a graphic editor,” “principles of electronic marketing,” etc.). The system is gradually complemented by new modules with the help of new partners (“reliable” ones who have passed control for the value of information, their legitimacy). At the same time, online trainings, seminars, workshops according to the interests of the participants are necessarily organized in the system. The system has a virtual library with a set of electronic publications (by thematic groups) with audio recording of annotations. The participants held online conferences and organize online hackathons (team defence of start-up projects prepared by international groups of university and school students). An important aspect in the operation of this platform is the international format focused on the cooperation of intellectual, technical resources and the capabilities of organizers (partners) from different countries. This will make it possible to apply advanced foreign experience in training and to gain specific competencies by users. At the current stage of society's development – the creation of a digital society, the development of digital technologies in every sector of the economy and social sphere, as well as the global problem (the Covid-19 coronavirus pandemic), the importance of the implementation of digital educational platforms is extremely high. It is required to concentrate the maximum possible resource potential (lecturers, programmers, students, authorities, public organizations, business sector) to create conditions that allow young people not to reduce their level and quality of academic performance in certain subjects, disciplines and competencies, but to maintain and develop them even more, by using modern technical means of communication, innovative educational technologies, teaching methods, combining the positive experience of several countries. Cooperation in this direction is important at the global level: combining foreign experience in the use of innovative teaching technologies, the accumulated material for the development of modern competencies, the possibility of exchanging information without territorial and linguistic boundaries, all these contribute to the creation of a completely new model of the educational process – a digital model. At the development stage of this model – a global flexible digital model of education – the most important component is a management system that allows for an operational analysis of system users' requests, forecasting trends in socio-economic development, adapting to the changing states of countries' functioning, qualitative, expert selection of downloaded information, territorial features. There is a wide variety of e-learning and distance learning platforms (Table 1).

*Table following on the next page*

*Table 1: Features of digital learning platforms*

No	Name	Features
<b>I. Learning platforms for university programmes, additional training for adults and youth</b>		
1	ALISON	It offers over 1000 free online courses and a certificate after completion. Alison students have access to courses from renowned universities such as Columbia, Cambridge and Yale, and large companies such as Microsoft and Google.
2	COURSERA	Founded by Stanford University computer science professors. The project cooperates with universities that publish and conduct courses in the system in various fields of knowledge. Students take courses, communicate with fellow students and pass tests and exams. The platform offers over 2000 courses and 160 specializations from 149 educational institutions.
3	UDACITY	The webpage contains online, project-based classes that focus on programming, data science, and math.
4	MIT Open CourseWare	Free online courses from MIT.
5	Open Culture	A collection of free educational resources including courses, tutorials, videos, and films.
6	Open YALE Courses	Provides free and open access to introductory courses by prominent Yale professors and scholars. All lectures are recorded in Yale classrooms and are available in video, audio and text transcripts.
7	Khan Academy	The site contains many lectures on various topics: from history and medicine to chemistry and computer science.
8	VideoLectures.NET	Plenty of videos on various topics.
9	TED	Motivation and education lectures from renowned experts from around the world
10	Shodor	The site contains learning resources, software, interactive lessons, research, and information on workshops for students, lecturers and learners of all ages in math and science.
11	Maths & Science	Mathematics and science courses, tests, and study materials for all grades.
12	Open Learn	Provides free access to Open University teaching materials.
13	Academic Earth	Free video lectures of the world's leading scientists
14	Open2study	Provides free high-quality online education. In four weeks, you can learn something new, figure out how to take the next step in your career, challenge yourself or simply satisfy your curiosity. The courses are from leading Australian institutions and are taught by academics and industry leaders.
15	OEDb	More than 10,000 online courses in various subjects and areas of knowledge.
<b>II. Learning platforms for school programmes</b>		
16	Dnevnik.ru	A closed information system with a strict registration procedure for educational institutions and users.
17	Moodle	A knowledge management system that allows you to organize the e-learning process from the development of an online course to its implementation.
18	Google classroom	Free set of tools for working with e-mail, documents and storage. The service is designed for teachers.
19	Russian electronic school	Full school course of lessons from the best teachers in Russia; it is an information educational environment that unites students, teachers and parents.
20	Mobile e-learning	Creates a safe educational environment; provides conditions for organizing personalized learning of students in accordance with their needs, as well as with the needs of the regional economy.
21	Uchi.ru	Russian online platform where students from all regions of Russia study school subjects in an interactive manner.
22	Education.yandex.ru	More than 35,000 tasks of different difficulty levels are available. All tasks are developed by experienced methodologists, taking into account educational standards.
23	Foxford.ru	Online preparation of students of 3-11 grades for the Unified State Exam, Basic State Exam and Olympiads, as well as advanced learning of school subjects in groups and individually.
24	Yaklass.ru	The resource is aimed at teachers, students and parents. YaKlass contains electronic magazines and collaborates with popular publishers. It also contains 1.6 trillion school curriculum assignments and 1,500 video lessons.
25	1C: Online school	Online access to electronic educational resources: simulators, laboratories, games, workshops, tests and much more.
26	Codewards.ru	A platform for teaching children the basics of programming in a playful way.
27	New school platform	This digital platform is a complex digital environment for communication and interaction of the main participants in the educational process regarding educational goals.
28	IntertenUrok.ru	Complete distance secondary education. For family education, for those who often miss school or live outside Russia.
29	Career guidance portal "Ticket to the future" (2020).	Portal contains video lessons for middle and high school students as well as advanced testing in various specialties and areas of training already based on school education

*Note: prepared on the basis of the "List of educational platforms recommended by the Ministry of Education of the Russian Federation and the Ministry of Education, Science and Youth Policy of the Nizhny Novgorod region, for the implementation of educational programmes using e-learning and distance learning technologies" (2020b; 2020c).*

The above-described platforms and many others that are used for educational purposes work on one principle – they provide a database of video, audio material on relevant topics. Distinctive features of our proposed project include:

- preliminary questionnaire in order to identify the main (professional) and additional needs of the user;
- purposeful individual support of the learning process (preparation of an individual learning schedule, basic remarks, strengths and weaknesses of the user-student, etc.);
- reflective thinking encouraged by the results of the intermediate and final stages of training;
- combination of online learning with components of distance education (learning the material independently on the basis of video, audio material, practical case assignments, project defence, interactive games, etc.);
- selection of news material from the Internet in accordance with the user's requests, their achievements, the dynamics of progress and other peculiarities (according to their profiles);
- participation in online educational, scientific and practical activities corresponding to the selected block of competencies, interests and plans;
- operation of the virtual library at the request of the user.

The implementation of the project is aimed at developing a modular educational environment, including training modules (distance online learning; performing practical tasks; using interactive forms of training, using case studies for participants), a platform for organizing and conducting online conferences (seminars, round tables, hackathons), a virtual library (with a thematic set of electronic publications with audio recording of annotations, for individual publications – additionally with video theses). Such environment will expand by adding new participants – reliable (“proven”) partners (universities, schools, scientific, research centres, incubators, technology parks) – in order to fill and create a comprehensive training base. Moreover, representatives of business, government and public organizations will be added to the system, acting as consultants, experts and coordinators for individual educational modules for the development of the specified competencies. To solve this problem, it is necessary to perform a number of actions within the framework of the proposed project:

- Create sets of training materials for educational modules. The first experimental modules will be:
  - “Digital Society” (innovative teaching tools, e-mail marketing, big data analytics, Internet of Things, robotics);
  - “Culture and traditions of peoples”;
  - “Start-up Design”;
  - “Psychological help”.

Training materials will include practical case studies, explanatory solutions for each task, video recordings, multimedia presentations (including with audio recordings).

Develop curricula, online conference programmes and a digital children's laboratory programme.

- Develop a functional information environment, upload prepared materials for each module, create individual classrooms for each teacher (for online learning, storing useful information, checking completed assignments), create a platform for expanding a virtual library, develop a platform for organizing a digital children's laboratory (children 5-8 years old) for experiments;
- Conduct testing of the developed modular learning environment on an experimental group of university and school students in the process of organizing and conducting training, organizing online conferences, online courses, the operation of a virtual library, a digital children's laboratory;

- Conduct a marketing campaign to promote and distribute the developed modular distance learning environment among young people, including abroad.

Consequently, the specific results of the implementation of the proposed digital platform will be:

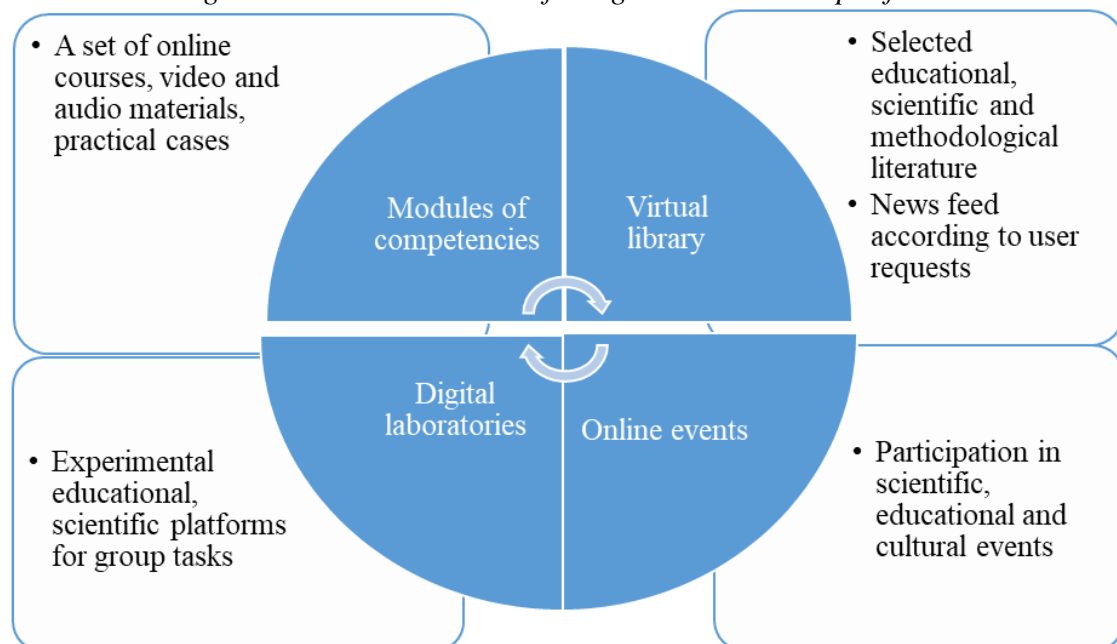
- Developed e-learning kits for specific educational modules (audio and video recordings of courses, practical cases, etc.);
- Developed informational modular learning system (modular distance learning, modular training online (full-time), platforms for organizing online conferences, virtual library, digital children's laboratory);
- Interactive training simulators for specific modules.

The results obtained are aimed at improving the level and quality of education among:

- youths (students of universities, schools and colleges);
- teachers (teaching technology, methods of organizing distance learning based on a modular system);
- business community (recruiting a specialist with modern, in-demand competencies and skills);
- public authorities (high-quality, prompt solution to existing problematic issues with the help of the potential of active, intelligent young people; promotion and popularization of the education of each member of society).

The “modular learning environment” proposed for development includes distance learning courses on competencies, a virtual library, news filters, online conferences and a digital children's laboratory (Fig. 2). For its development and successful launch, the possibility of expansion on the basis of an international network of partners (universities, schools from Belarus and from partner countries – Russia, Czech Republic, Hungary, etc.), it is necessary to purchase equipment and organize a series of webinars (Terziev, et al. 2020d; Terziev, et al. 2020e).

*Figure 2: Structural model of a digital educational platform*



The modular learning environment will perform the following functions:

- Distance learning in selected modules (both with full-time participation and in distance format, based on a set of educational materials, practical tasks, systematic intermediate control by teachers and studying recommendations from the teacher to improve their results;
- Development of group projects, including international youth teams; systematic training (online training) is carried out with the subsequent defence of the proposed ideas on the modules topics;
- Organization of online conferences (round tables, workshops) with international participation according to the selected module (for the participants of a specific module, training is immediately carried out with the subsequent preparation of their own reports and works and their discussion;
- Work in a virtual library (that contains a catalogue of electronic publications with audio recording of annotations).

### 3. CONCLUSION

The modular learning environment will improve the quality of distance learning (learning by modules, virtual library, group start-up projects, digital children's laboratory) on the basis of international cooperation of the CEI member countries. The system will be supplemented with new modules with the assistance of intellectual resources (electronic publications, online modules, trainings) of universities, partner schools from other countries (Ukraine, Poland). The creation and implementation of this platform will contribute to (Klimuk, et al., 2020f):

- Organization of international distance (including network) cultural and educational schools with virtual tours to cities and regions of different countries – participants of the project;
- Organization of periodic international online conferences;
- Expansion of the electronic thematic library (smart-library).

The further development of the modular learning environment will be carried out by engaging new participants – partner universities from other countries, which will create an international educational distance network for the development of new competencies and practical skills among young people. Practitioners from organizations, representatives of public organizations, business communities and government bodies will definitely be involved in supporting this platform.

### LITERATURE:

1. Safuanov, R.M., Lehmus, M.Yu., Kolganov, E.A. (2019). *Digitalization of the education system*. // Bulletin of USPTU. Science, education, economics. Economics series. No. 2 (28), 2019. - pp. 108-113
2. Strekalova, N.B. (2019a). *Risks of introducing digital technologies into education*. // Bulletin of Samara University. History, pedagogy, philology. Volume 25. - No. 2. - 2019. pp. 84-88.
3. Averina, L.V., Klimuk, V.V., Pecherskaya, E.P., Polynova, L.V. (2018). *Modeling Of Realization of Educational Programs In The Network Form Of Interaction*. // The European Proceedings of Social & Behavioural Sciences EpSBS, pp.1638-1648. doi:<https://dx.doi.org/10.15405/epsbs.2019.03.166>.
4. Klimuk, V.V., Lazdins, V. (2019b). Interaction of education, science and business in terms of digital economy development. Proceedings of the 2019 International Conference “Economic science for rural development”. Jelgava, LLU ESAF, 9-10 May 2019, pp. 37-48.
5. Information society in the Republic of Belarus: Stat. data book. (2019c). // ed. I.V. Medvedeva. - Minsk, 2019, p. 100.

6. Indicators of the Digital Economy, (2019d).
7. <http://bilet-help.worldskills.ru/> (2020).
8. <https://trends.rbc.ru/trends/education/5d9ccba49a7947d5591e93ee> (2020a).
9. Kovalev, M.M., Golovenchik, G.G. (2018a). The digital economy as a chance for Belarus. Monograph. – Minsk: BSU Publishing Centre, 2018. p. 327.
10. <https://nsportal.ru> (2020b).
11. <https://ru.studyqa.com/articles/30-educational-online-platforms> (2020c).
12. Terziev, V., Andreeva, O., Georgiev, M, Klimuk, V. (2020d). *Dynamics of scientific results in the higher education*. // Proceedings of ADVED 2020- 6th International Conference on Advances in Education 5-6 October 2020, International Organization Center of Academic Research, Istanbul, Turkey, 2020, pp. 335-347, ISBN: 978-605-06286-0-9.
13. Terziev, V., Andreeva, O., Georgiev, M, Klimuk, V. (2020e). *Challenges in the development of Bulgarian higher education system during post-crisis period*. // Proceedings of ADVED 2020- 6th International Conference on Advances in Education 5-6 October 2020, International Organization Center of Academic Research, Istanbul, Turkey, 2020, pp. 348-351, ISBN: 978-605-06286-0-9.
14. Klimuk, V., Tarasova, A., Kuznetsova Yu., Dzhabrailova L. (2020f). *Synergistic Interaction of Education, Science, and Industry*. // Leadership, Education, Personality: An Interdisciplinary Journal, April, 2020, <https://doi.org/10.1365/s42681-020-00009-y>.



# INTERNATIONALIZATION STRATEGIES IN FAMILY BUSINESSES: MAIN TRENDS AND GUIDELINES FOR FUTURE AVENUES OF RESEARCH

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## **ABSTRACT**

*This study aims at researching the effect of family involvement in internationalization strategies. The current state of literature in this field shows that family businesses are one of the most important typologies of businesses for the world economy. They are responsible for most of the Small and Medium sized firms representing a crucial role for regional and social sustainability. We adopted a systematic literature approach as it seeks to analyze and synthesis all the literature in this field. We performed a quantitative and qualitative assessment of 44 indexed published articles . The research regarding family businesses has been vastly explored. Nevertheless, there is still a lack of knowledge regarding their internationalization strategies.. Our results point to a lack of proper frameworks and theories that fully explain the unique characteristics of these firms in their international expansion. We add to the literature by identifying the main research avenues used in the literature, the predominant strategies used by family businesses and the need to produce new policies and frameworks hoping it could change the perceived value of family businesses by policymakers.*

**Keywords:** *family involvement, internationalization, family businesses*

## **1. INTRODUCTION**

Family Businesses (FB) are among the most vital enterprises for the foundation of economic sustainability and creation of wealth [1], they are embedded in all sectors and represent between 70 %-80% of all firms in Europe and contribute to employment among 40%-50% [2] . FB can range from small and medium firms to large multinational businesses, which evidences the complexity in this typology of organization. To define a FB is still a difficult task despite all the research done in the field. The absence of an agreement regarding the definition of FB creates struggles among scholars [1,3]. Some support the definition of FB according to ownership others with their management structure. Nevertheless, no concrete definition has been broadly accepted [4]. According to Zahra, [4] family involvement is one of the key aspects and attributes in FB. Family involvement in FB is always interlinked with the running of the business [6,7], it is one of the key features in their internationalization commitment. The synergy between the family and the business not only provides a course guide and drive for their strategies, but also the knowledge to analyze the benefits of international growth [8]. Nonetheless, some authors diverge regarding the effect of family involvement in internationalization [4]. Whereas Zahra, [4] regards family involvement as an incentive to international growth. According to Gomez-Mejia et al., [8] a FB are reluctant to internationalize and show lower commitment levels in order to prevent loss of their socio-emotional wealth (SEW). Nevertheless, most of the studies don't present a unanimous definition of FB which can determine a divergency of results [8].

The succession process in FB is one of complex nature, often influenced by the intricate family structure and dictates the future of the firm and family legacy [9]. If the FB does not engage in internationalization in the first or second generation it is likely that later generations will not be involved in this process [10]. According to Okoroafo, [11] the second generation has more affinity to be more international than the first generation. Conversely, according to the same author Okoroafo, [11], the second and third generation share the same attitude and perspective towards internationalization. The literature also shows that the second generation has a more entrepreneurial behavior which leads to conclude that risk-taking is one key factor that distinguishes generations in FB [12]. Risk perception can be a determinant factor for the level of commitment in internationalization. In FB according to Claver et al., [14] risk perception decreases with the presence of the first generation, the perceived risk becomes higher as firms progresses in their international. According to Zahra, [4], the dimension of ownership has a huge effect on internationalization, it is a determinant for the degree and the geographical extent of international growth and expansion, this supports the Stewardship theory due to the levels of altruism in FB, rather than the Agency Theory. Family involvement can enrich internationalization in several ways. FB have a governance structure based on altruism it allows managers to pursue and develop their business strategies with more openness and freedom this leads to simplify the allocation and exploitation of international markets [15]. Also, the involvement of non-family members in the governance structure can bring a positive effect on internationalization, it can provide the necessary resources to their international growth strategies [16,17]. Conversely, the presence of family members in the governance structure of the firm can cutback the level of commitment towards internationalization [18]. The involvement of the family represents a critical aspect for their running of business, the dimension of SEW represents a key aspect for this firms and has become a mean to explain how this firms differ in their strategies and goals and their internationalization behavior [19,20]. FB present different internationalization strategies than Non-FB. Due to the lack of resources and risk-aversion in FB they are less likely to internationalize and to engage in networks with other firms [21]. There is a significant relationship between family involvement and internationalization [22]. Our main goal is to provide new research guidelines for family involvement in internationalization by constructing a systematic literature review. To do so, we started with a brief explanation of our methodology approach and the criteria used to gather the articles reviewed in this SLR. We follow with the results divided by quantitative results in which we have a bibliometric analysis and a qualitative analysis in which we explore in detail the main findings of family involvement in internationalization. We add to the literature by identifying the main research avenues used in the literature and the need to the conception of new policies and frameworks hoping it could create new guidelines and future research.

## **2. METHODOLOGY**

This article has a systematic literature review approach as it seeks to appraise, synthesis and evaluate all the relevant literature [23]. According to Tranfield et al., [24] a systematic literature review organizes and evaluates literature and it is a vehicle to identify gaps and pattern for future research. In order to achieve our objectives, the structure of this study is divided in two complementary approaches. The quantitative approach adopts a bibliometric analysis which leads to a broader overview of the reviewed studies. In the qualitative approach we discuss and analyze in detail all the contents in the reviewed studies. Both methodologies' have a different outcome and mixed together can emphasize and evidence results that can highlight gaps in the literature and propose future directions of research. Table 1 encapsulates our research approach.

Stage	Approach	Objective
Stage 1	Quantitative Approach	Analysis of the research goal, detailed description of reviewed papers under bibliometric approach
Stage 2	Qualitative Approach	Discussion and analysis of the findings and results regarding family involvement in internationalization

*Table 1: Research Approach*

The research process was conducted on Scopus Database, we decided to use only one database in order to have a reliable method of replication. The Scopus Database is considered one of the largest and most used databases of peer-reviewed published articles. The search was conducted on February 1st, 2021. The first stage of the research was to combine the correct keywords to achieve our goals (Table 2). Therefore, we searched the combination of “Family Involvement” and “Internationalization” in the topic (title, abstract and keywords). By doing so, we narrowed down irrelevant studies for our research and assure valid results aligned with our goals. We found an initial set of 58 articles. The selection of the articles was followed by the inclusion of only English written manuscripts, published articles in peer-reviewed Journals. Book reviews and conference papers were excluded in order to guarantee reliability. Taking into account the nature of our study we only reviewed articles in the “Business, Management and Accounting” area. Thus, we ended up with 44 articles that were reviewed and analyzed in this systematic literature review in order to meet the goals and objectives of our research.

Criteria	Search string in Scopus Database	Articles
Keyword	“Family Involvement” and “Internationalization”	58
Restriction	Title, Keywords, Abstract	
	<b>Selection of articles</b>	
Language	English	58
Document Type	Articles	55
Source Type	Journals	51
Subject Area	Business, Management and Accounting	44

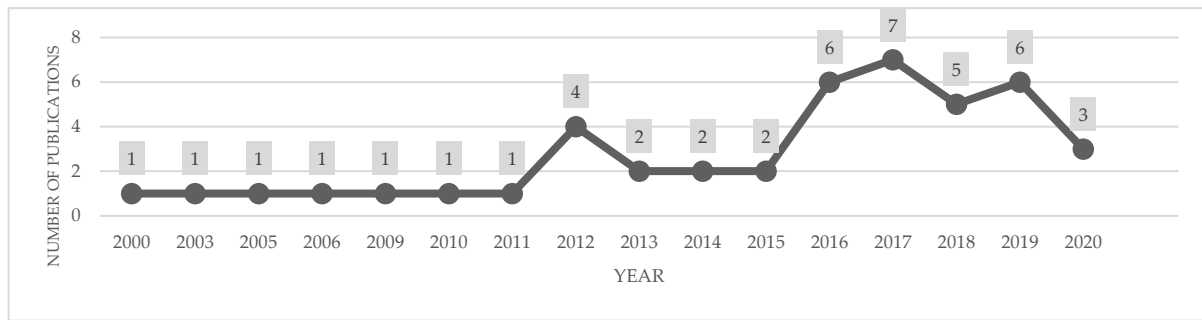
*Table 2: Research Methodology*

### 3. RESULTS

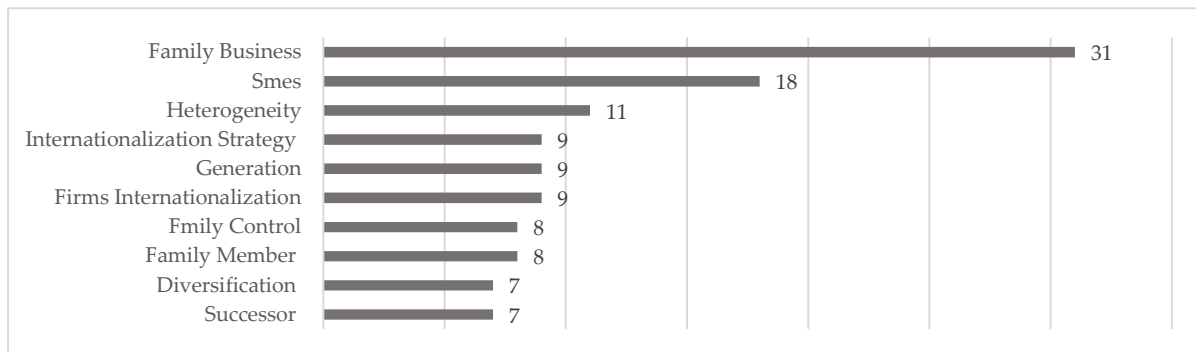
#### 3.1. Quantitative results

The number of research studies in the topic of family involvement in internationalization has been growing over the last years. The present study analyses 20 years of research in this topic, 2000 to 2020, by doing so we have a large scope of the true effect of family involvement in the process of internationalization (Fig 1). In 2017, there was a peak of published articles in this research field, this fact denotes the importance of FB business in the scientific area. The growing expansion and liberation of world markets has made internationalization studies a “hot topic”; this fact is more evident in the last 10 years with a great surge of scientific publications.

*Figure following on the next page*

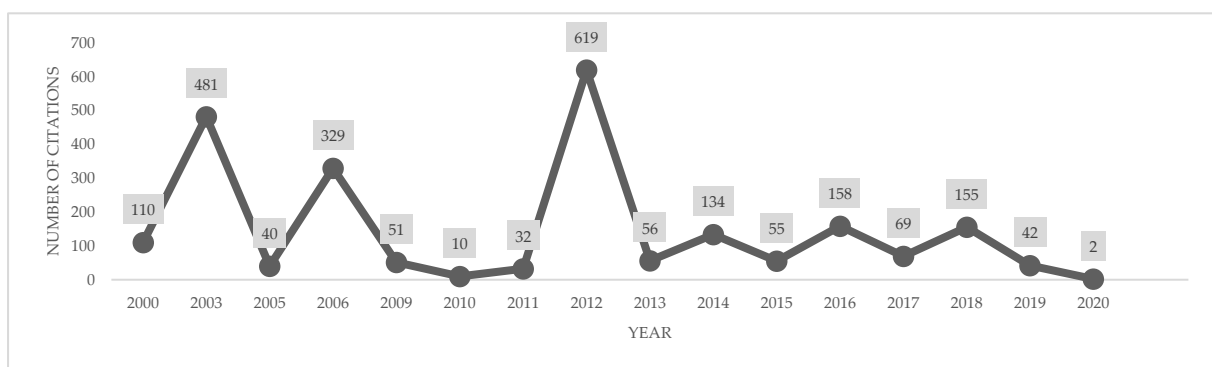


*Figure 1: Evolution of the number of published articles*



*Figure 2: Top cited keywords with more than 3 occurrences*

Fig.2 emphasizes the most cited keywords for all 44 articles from 2000, to 2020. The most applied keyword is “Family-Business”. Taking a closer analysis to the other keywords not only can we highlight themes for future research but also observe the key themes that are most related with the subject in this study. Conversely, topics such as “Generation” and “Family-Control” are related to family involvement in internationalization strategies. In this regard we will analyse later in our qualitative study the close connection with the theme of our study. In the present study 93,2 % of the studies have been cited and 26% have more than 10 citations (Fig 3). The year of 2012 was the year with more citations (619), this goes inside the fact that in this year there was a significant rise of published articles in this field.



*Figure 3: Citation evolution per Year*

The following Table 3 highlights the most cited journals in our study, the number of articles per Journal and the Quartile and H-Index. The 44 articles present in this study were published in 30 different journals. Moreover, besides the journal distribution we conducted a research in SCImago Journal & Country Rank (SJR). SJR measures the influence and the prestige of Journals. The Journal of Entrepreneurship: Theory and Practice which we reviewed three articles in our study, is the one with most citations.

This Journal is ranked as one of the most influential business journals with an excellent impact factor Q1. The SJR results also evidence the great prestige of the most cited Journals present in our study, namely the “Journal of International Business Studies” and “Journal of Business Venturing”.

Journal	Citation	Articles	Quartile  H-index
Entrepreneurship: Theory and Practice	495	3	Q1 140
Journal of Business Venturing	481	1	Q1 170
Journal of International Business Studies	395	2	Q1 184
Family Business Review	181	2	Q1 96
Journal of Small Business Management	144	3	Q1 103
Global Strategy Journal	136	4	Q1 18
Journal of Management and Governance	124	1	Q2 47
International Journal of Globalisation and Small Business	93	3	Q3 16
International Business Review	73	3	Q1 87
Review of Managerial Science	63	1	Q1 20
Management and Organization Review	32	1	Q1 59
European Management Journal	29	1	Q1 99
Journal of Business Research	19	1	Q1 179
European Research on Management and Business Economics	14	1	Q1 114
European Business Review	10	1	Q1 39

Table 3: Journals with most citations

There is a huge focus on empirical works in this area of research (Fig. 4). Therefore, there is a need for theoretical studies in order to support and validate empirical research. Future research can address this lack of theoretical studies by developing or creating new frameworks and theories regarding this research field.

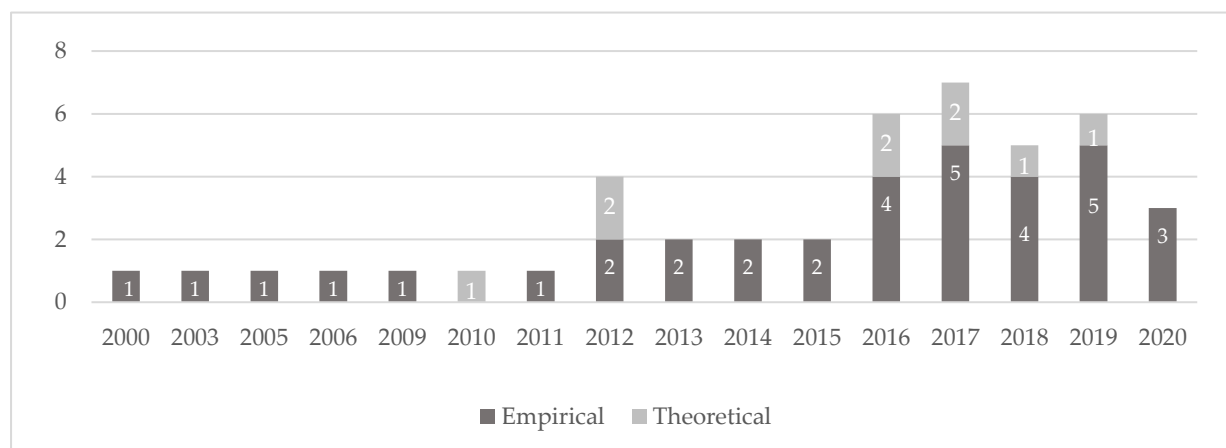


Figure 4: Research approach evolution by year

The countries that developed more publications in this research were Italy (13 publications), United States of America (11 publications) and Spain (7 publications) (Fig. 5). This results highlight the significance and prominence of FB in these countries that have a direct contribution to the economic structure and sustainability.

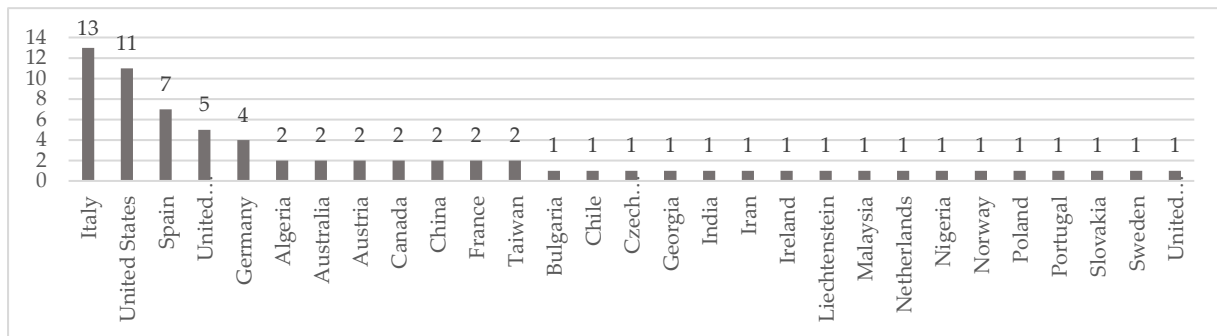


Figure 5: Published articles by country

### 3.2. Qualitative results

In order to combine the major findings in the literature, we decided to present two different sections in the qualitative analysis: ownership capabilities and policy frameworks. Thus, we can present and identify the most valued viewpoints regarding the family involvement on the internationalization process and present new policies in order to promote and reveal the importance of FB in economic sustainability.

#### 3.2.1. Predominant Strategies

The articles featured in the present study draw on different concepts and different frameworks. Nevertheless, there is a common emphasis on the long-term orientation, risk aversion and stewardship behavior in FB. Family involvement can institute the way in which the firm operates [14]. The presence of family members can lead in some cases to organizational tensions which can affect the decision-making process [25,26]. The family sub system is a crucial element in family firms, identifying new opportunities (exploration) and exploiting existing activities helps family firms to gain and develop a successful business model across multiple generations [27,28]. Exploitation and exploration are two different learning behaviors that require different attributes from the firm in terms of management structure, resources and strategy [29]. In order to have a successful business strategy FB must find a balance between exploration and exploitation activities [29]. Looking at the literature regarding internationalization, it is clear the lack of a particular framework or approach that explains the broad scope of the process in FB. Many empirical studies [13] apply theories like Uppsala model [30] or network-based approaches [31]. Nevertheless, these theories do not explain in its entirety internationalization processes in FBs [32]. Thus, there is a need to establish current guidelines that can detail internationalization in FBs in its totality. As suggested by De Massis et al., [47] future research could also analyse the family's involvement to internationalize changes across generations and the effect of the business life-cycle in the process and how they cope it unforeseeable changes in the markets. The literature highlights ownership and management capabilities as being one of the most crucial steps to understand internationalization in FB. The ownership structure in FB differs from non-FB in their access to resources and management style [34]. Resources can be a detrimental element for the internationalization process [33, 35], they determine and provide the means in which the firm operates, thus, they can support the firm to grow internationally or hinder international expansion and bound the firm to national markets [38]. FB prefer to be surrounded by family members, however, their lack of international knowledge and resistance to change can be a barrier towards internationalization [39,40]. Usually, FB are managed by their founder or members of the family, however, the skills and knowledge may be short when it comes to international experience [41,42]. Moreover, FB may lack in terms of qualified personnel, necessary to the engagement in international strategies [43].

On the other hand, the relationship among family members improves the commitment and the transfer of knowledge among its members [44]. FB can obtain more resources to proceed with their internationalization through external financing or ownership [45]. The inclusion of external ownership can convey into FB more resources, capital, knowledge and external networks that can allow the firm to gain additional access in international markets [46–48]. The duality regarding the choice of FB to expand internationally is apparent in the literature [33,49]. Their SEW and risk-aversion may lead FB to have their strategies fixated on local markets [47,50]. The choice to remain local can be affected by high concentration of ownership [40]. Thus, external managers should be taken into account if FB want to expand their activities overseas [51]. External managers can invigorate, bring new knowledge and new entrepreneurial orientation that can reverse traditional mindsets in FB, making them more proactive [36,38,40]. Stewardship orientation is prominent in FB [42,43,52], the members of the firm have a conservative attitude towards preserving the legacy and survival of the business for successive generation. This orientation can lead to an aversion towards risk and therefore internationalization [16,41]. Nonetheless, the collectivism and commitment in stewardship can prompt FB to follow international strategies [43,52]. Internationalization practices require quick adaptability towards the changes in the markets [53]. The speed in which the process is developed can be a crucial phase for its accomplishment [54]. The way FB enroll their internationalization processes is essential, according to De Massis et al., [47] family involvement can have contrast effects in the speed of the process. Having a risk aversion and a great emotional involvement with the business can indicate to a slower decision process [50]. Nevertheless, due to their organizational and ownership structure FBs have a propensity to be quick in changes in the market which can lead them to achieve faster internationalization [5,33]. Many scholars perceive their processes to be done in a more traditional path, following theories like the Uppsala stage theory [30]. These firms choose to internationalize in closer countries to their home base, avoiding more costly and less riskier strategies [49,56,57]. However, this behavior can lead to miss opportunities and not profiting fully from international expansion. One way in which FB tend to start their internationalization is through exporting [56]. FB can benefit from this process and conversely, be more motivated to engage in further processes in international markets [56]. Therefore, family involvement can influence internationalization in opposite forms. A high level of family involvement can develop inflexibility and higher risk aversion, which leads firms to less active pursuit of internationalization strategies [43,47,55]. Introducing non-family managers, investors and qualified personnel can be the right strategy to invigorate their governance and consequently lead them to pursue international expansion and take more opportunities in external markets [43,47].

### *3.2.2. Policy Frameworks*

Region specific attributes can play a major influence on internationalization in FB [58]. Most of the research on FB has an emphasis on developed countries [59]. As it can be observed in Fig.5, Italy, United States and Spain are the countries with more output of research in the field. Consequently, it is crucial to take a closer look and understand the reasons that lead these countries to pursue more research in FB. According to the latest update on FB contribution to the U.S. economy, these organizations are accountable for 60% of the GDP, hence it is clear the prominence and impact these companies have [60]. FB are embedded among developed and developing countries they are a value of extreme importance for the economy [60,61]. Nevertheless, public entities need to have knowledge and regard FB in different lenses. There must be a careful effort from policymakers towards these firms not only to support them in their internationalization strategies but to help them survive [62]. Policies towards the support of FB have been unnoticed [60]. In light of recent effects, De Massis & Rondi [63] stressed the challenges in the aftermath of the Covid-19 pandemic for FB.

The authors predict a need to future research regarding the disturbances caused by the pandemic. The work of De Massis & Rondi [63] is of most importance, in present times, not only to the literature but in practical terms. The authors address the critical need to advance studies in the field of FB. As a result of the Covid-19 pandemic, many FB will be faced with great struggles like unplanned generational transition of management and the sudden disruption of their business [63]. Thus, researchers must address frameworks that can help them overcome and adapt to new realities in a post pandemic scenario [63]. Moreover, we propose the creation of new policy frameworks, with the basis on the FB distinctive characteristics. Government policies like fiscal and monetary as mentioned by Pieper, Kellermanns and Astrachan, [60], can be the key to provide not only financial aid in crisis but also the means to the survival of FB not only in international scenarios but in their long term activity.

#### 4. CONCLUSION

Although there are a lot of studies regarding family involvement in internationalization there are avenues requiring further research. In the present article, we can observe a lack of theoretical research, we recommend the need to develop alternative theoretical frameworks that can explain the full impact of family involvement in internationalization. FB represent 80% of European companies [2], thus policymakers need to rethink the role of FB not only in the economic sustainability but the social and region development of the country. This avenue of research could be a milestone achievement regarding FB, not only in the literature but in a practical sense. Highlighting the relevance and the uniqueness of FB into policymakers could improve the way these firms perceive riskier strategies like internationalization or innovation. Thus, it could produce a new light into the discussion and the creation of unique policies that could help them strive in international markets and resort to financial capital in crisis like the post pandemic of Covid-19. The main reasoning behind this study was to identify the main avenues of research on the family involvement in FB. Firstly, we presented a quantitative study analysing the state of the art of the literature. Secondly, we discussed the effect of ownership capabilities and policy frameworks in FB. The contribution of our study is related to the identification and creation of new policies and frameworks hoping it could create new guidelines and future research. Although and despite, the high number of publications in this field there is still room to a broad variety of studies that can help bridge the gap between the reality and bring awareness to the importance of FB. This article has its limitations, like all systematic literature reviews there is a bias towards the choice of keywords and the database. Conversely, we opt to choose a more simpler keyword combination and a single database in order to create the highest transparency and an easy reproduction of the method.

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#### LITERATURE:

1. Dana, L. and Ramadani, V. (2015) 'Context and Uniqueness of Family Businesses', *Family Businesses in Transition Economies: Management, Succession and Internationalization*, pp. 1–349.
2. Mandl, I. (2008) 'Overview of Family Business Relevant Issues on behalf of the European Commission, Enterprise and Industry Directorate-General.', *Final Report, Austrian Institute for SME Research, Vienna.*, p. 169.
3. Kotlar, J. and Chrisman, J. J. (2019) 'Point: How Family Involvement Influences Organizational Change', *Journal of Change Management*, 19(1), pp. 26–36.



4. Sharma, P. (2006) 'An overview of the field of family business studies: Current status and directions for the future', *Handbook of Research on Family Business*, pp. 25–55.
5. Zahra, S. A. (2003) 'International expansion of U.S. manufacturing family businesses: The effect of ownership and involvement', *Journal of Business Venturing*, 18(4), pp. 495–512
6. Seaman, C., McQuaid, R. and Pearson, M. (2017) 'Social networking in family businesses in a local economy', *Local Economy*, 32(5), pp. 451–466.
7. Hasenzagl, R., Hatak, I. and Frank, H. (2018) 'Problematizing socioemotional wealth in family firms: a systems-theoretical reframing', *Entrepreneurship and Regional Development*, 30(1–2), pp. 199–223.
8. Cano-Rubio, M., Fuentes-Lombardo, G. and Vallejo-Martos, M. C. (2017) 'Influence of the lack of a standard definition of “family business” on research into their international strategies', *European Research on Management and Business Economics*, 23(3), pp. 132–146.
9. Le Breton-Miller, I., Miller, D. and Steier, L. P. (2004) 'Toward an integrative model of effective FOB succession', *Entrepreneurship: Theory and Practice*, 28(4), pp. 305–328.
10. Okoroafo, S. C. (1999) 'Internationalization of family businesses: Evidence from Northwest Ohio, U.S.A', *Family Business Review*, 12(2), pp. 147–158.
11. Okoroafo, S. C. (2010) 'Generational Perspectives of the Export Behavior of Family Businesses', *International Journal of Economics and Finance*, 2(3).
12. Casillas, J. C., Moreno, A. M. and Barbero, J. L. (2010) 'A configurational approach of the relationship between entrepreneurial orientation and growth of family firms', *Family Business Review*, 23(1), pp. 27–44.
13. Claver, E., Rienda, L. and Quer, D. (2009) 'Family Firms' International Commitment', *Family Business Review*, 22(2), pp. 125–135.
14. Rienda, L., Claver, E. and Andreu, R. (2020) 'Family involvement, internationalisation and performance: An empirical study of the Spanish hotel industry', *Journal of Hospitality and Tourism Management*, 42, pp. 173–180.
15. Colli, A., García-Canal, E. and Guillén, M. F. (2013) 'Family character and international entrepreneurship: A historical comparison of Italian and Spanish “new multinationals”', *Business History*, 55(1), pp. 119–138.
16. Calabrò, A. *et al.* (2017) 'Governance structure and internationalization of family-controlled firms: The mediating role of international entrepreneurial orientation', *European Management Journal*, 35(2), pp. 238–248.
17. Tsang (2001) 'Internationalising the Family Firm: A case study of Chinese Family Business', *Journal of Small Business Management*, pp. 88–94.
18. Gómez-Mejía, L. R. *et al.* (2007) 'Socioemotional Wealth and Business Risks in Family-controlled Firms: Evidence from Spanish Olive Oil Mills', *Administrative Science Quarterly*, 52(1), pp. 106–137.
19. Gomez-Mejia, L., Cruz, C. and Imperatore, C. (2014) 'Financial reporting and the protection of socioemotional wealth in family-controlled firms', *European Accounting Review*, 23(3), pp. 387–402.
20. Graves, C. and Thomas, J. (2004) 'Internationalisation of the family business: a longitudinal perspective', *International Journal of Globalisation and Small Business*, 1(1), pp. 7–27.
21. Fernandez, Z. and Nieto, M. J. (2005) 'Internationalization Strategy of Small and Medium-Sized Family Businesses', *Family Business Review*, 18(1), pp. 77–89.
22. Grant, M. J. and Booth, A. (2009) 'A typology of reviews: An analysis of 14 review types and associated methodologies', *Health Information and Libraries Journal*, 26(2), pp. 91–108.

23. Tranfield, D., Denyer, D. and Smart, P. (2003) 'Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review', *British Journal of Management*, 14(3), pp. 207–222.
24. Wiseman, R. M. and Gomez-Mejia, L. R. (1998) 'A behavioral agency model of managerial risk taking', *Academy of Management Review*, 23(1), pp. 133–153.
25. Dyer W, G. (2006) 'Examining the “ Family Effect ” on Firm Performance', *Family Business Review*.
26. Vrontis, D. *et al.* (2019) 'Entrepreneurial exploration and exploitation processes of family businesses in the food sector', *British Food Journal*, 121(11), pp. 2759–2779.
27. Le Breton-Miller, I. and Miller, D. (2009) 'Agency vs. stewardship in public family firms: A social embeddedness reconciliation', *Entrepreneurship: Theory and Practice*, 33(6), pp. 1169–1191.
28. March, J. G. (1991) 'Exploration and Exploitation in Organizational Learning', *Organization Science*, 2(1), pp. 71–87.
29. Johanson, J. and Vahlne, J.-E. (1977) 'The internationalization process of the firm - a model of knowledge development and increasing foreign market commitments', *Journal of International Business Studies*, 8(1), pp. 23–32.
30. Basly, S. (2007) 'The internationalization of family sme an organizational learning and knowledge development perspective', *Baltic Journal of Management*, 2(2), pp. 154–180.
31. Kontinen, T. and Ojala, A. (2010) 'The internationalization of family businesses: A review of extant research', *Journal of Family Business Strategy*, 1(2), pp. 97–107.
32. De Massis, A. *et al.* (2018b) 'Family firms in the global economy: Toward a deeper understanding of internationalization determinants, processes, and outcomes', *Global Strategy Journal*, 8(1), pp. 3–21.
33. Pfeffer, J. and Salancik, G. R. (1982) 'The external control of organizations: A resource dependence perspective'.
34. Graves, C. and Thomas, J. (2006) 'Internationalization of Australian family businesses: A managerial capabilities perspective', *Family Business Review*, 19(3), pp. 207–224.
35. Fernández, Z. and Nieto, M. J. (2005) 'Internationalization strategy of small and medium-sized family businesses: Some influential factors', *Family Business Review*, 18(1), pp. 77–89.
36. Arregle, J. L. *et al.* (2012) 'Internationalization of Family-Controlled Firms: A Study of the Effects of External Involvement in Governance', *Entrepreneurship: Theory and Practice*, 36(6), pp. 1115–1143.
37. Hennart, J. F., Majocchi, A. and Forlani, E. (2019) 'The myth of the stay-at-home family firm: How family-managed SMEs can overcome their internationalization limitations', *Journal of International Business Studies*, 50(5), pp. 758–782.
38. Gallo, M. A. and Sveen, J. (1991) 'Internationalizing the Family Business: Facilitating and Restraining Factors', *Family Business Review*, 4(2), pp. 181–190.
39. Wąsowska, A. (2017) 'The internationalisation of family firms: The role of the ownership structure and the composition of top management team', *Entrepreneurial Business and Economics Review*, 5(1), pp. 169–185.
40. Pukall, T. J. and Calabrò, A. (2014) 'The Internationalization of Family Firms: A Critical Review and Integrative Model', *Family Business Review*, 27(2), pp. 103–125.
41. Gomez-Mejia, L. R., Makri, M. and Kintana, M. L. (2010) 'Diversification decisions in family-controlled firms', *Journal of Management Studies*, 47(2), pp. 223–252.
42. Mitter, C. *et al.* (2014) 'Internationalization of family firms: The effect of ownership and governance', *Review of Managerial Science*, 8(1), pp. 1–28.

43. Sirmon, D. G. and Hitt, M. A. (2003) 'Managing Resources: Linking Unique Resources, Management, and Wealth Creation in Family Firms', *Entrepreneurship Theory and Practice*, 27(4), pp. 339–358.
44. Buckley, P. J. (1989) 'Foreign Direct Investment by Small- and Medium-Sized Enterprises: The Theoretical Background', *The Multinational Enterprise*, pp. 24–45.
45. Ray, S., Mondal, A. and Ramachandran, K. (2018) 'How does family involvement affect a firm's internationalization? An investigation of Indian family firms', *Global Strategy Journal*, 8(1), pp. 73–105.
46. De Massis, A. *et al.* (2018a) 'Family firms in the global economy: Toward a deeper understanding of internationalization determinants, processes, and outcomes', *Global Strategy Journal*, 8(1), pp. 3–21.
47. Nashier, T. and Gupta, A. (2016) 'The Effect of Institutional Ownership on Firm Performance', *IUP Journal of Corporate Governance*, 15(3), p. 36.
48. Graves, C. and Thomas, J. (2008) 'Determinants of the internationalization pathways of family firms: An examination of family influence', *Family Business Review*, 21(2), pp. 151–167.
49. Gomez-Mejia, L. R. *et al.* (2011) 'The Bind that ties: Socioemotional wealth preservation in family firms', *Academy of Management Annals*, 5(1), pp. 653–707.
50. Kellermanns, F. W. and Eddleston, K. A. (2006) 'Corporate entrepreneurship in family firms: A family perspective', *Entrepreneurship: Theory and Practice*, 30(6), pp. 809–830.
51. Westhead, P. (2008) 'International opportunity exploitation behavior reported by "types" of firms relating to exporting experience', *Journal of Small Business and Enterprise Development*, 15(3), pp. 431–456.
52. Casillas, J. C. and Moreno-Menéndez, A. M. (2014) 'Speed of the internationalization process: The role of diversity and depth in experiential learning', *Journal of International Business Studies*, 45(1), pp. 85–101.
53. Zahra, S. A. (2005) 'Entrepreneurial risk taking in family firms', *Family Business Review*, 18(1), pp. 23–40.
54. Metsola, J. *et al.* (2020) 'Process in family business internationalisation: The state of the art and ways forward', *International Business Review*, 29(2).
55. Carney, M. *et al.* (2017) 'Family firms, internationalization, and national competitiveness: Does family firm prevalence matter?', *Journal of Family Business Strategy*, 8(3), pp. 123–136.
56. Chung, H. M. (2014) 'The role of family management and ownership on semi-globalization pattern of globalization: The case of family business groups', *International Business Review*, 23(1), pp. 260–271.
57. Sanguino, R., Barroso, A. and Gochhait, S. (2018) 'Entrepreneurship in Family Firms in Developed and Developing Countries', pp. 91–108.
58. Pieper, T. M., Kellermanns, F. W. and Astrachan, J. H. (2021) 'Update 2021: Family Businesses' Contribution to the U.S. Economy', *Family Enterprise USA*, (704).
59. Anderson, R. C. and Reeb, D. M. (2003) 'Founding-Family Ownership and Firm Performance : Evidence from the S&P 500', *Journal of Finance, JSTOR*, 58(3), pp. 1301–1328.
60. Casillas, J. C. and Acedo, F. J. (2005) 'Internationalisation of Spanish family SMEs: an analysis of family involvement', *International Journal of Globalisation and Small Business*, 1(2), pp. 134–151.
61. De Massis, A. and Rondi, E. (2020) 'Covid-19 and the Future of Family Business Research', *Journal of Management Studies*, 57(8), pp. 1727–1731.

## HEALTH DIPLOMACY AS A SOFT POWER TOOL OF THE PR CHINA DURING THE COVID 19 PANDEMIC

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### ABSTRACT

*Health diplomacy, in times of any crisis, is an important component of the foreign policy of world powers with the aim of spreading its geopolitical influence around the world. Since the advent of the COVID-19 virus in late 2019, it has been shown that health systems, even developed countries, have not been prepared to respond adequately to the challenges posed by the coronavirus. We aim to determine whether the People's Republic of China (hereafter: the PR China), which was even publicly named by the then US President Trump as the source of the infection, calling the COVID-19 virus a "Chinese virus", seems to be exploiting the global health situation, activating its health diplomacy on a global level as the so-called "soft power" tool for spreading its influence around the world. The European Union (hereafter: the EU), but also the United States of America (hereafter: the USA), only a few months after the outbreak of the crisis, practically remained trapped in their own inertia. On the other hand, the PR China apparently has used every opportunity to expand and strengthen its geopolitical influence through health diplomacy. While the whole of Europe was in complete lock-down, there is no country in Europe that China did not supply with protective equipment, often donating certain quantities. The result of such a health approach, and in the context of the current situation, we can say the "vaccine diplomacy" is a delay in the delivery of vaccines, the only possible solution to the crisis, which again puts the EU in an unfavorable economic and geopolitical position. The focus of this paper is to analyze how the PR China, in the context of the COVID-19 crisis, uses its health diplomacy as a "soft power" diplomatic tool and what this means for China's future geopolitical positioning.*

**Keywords:** COVID-19, pandemic, health diplomacy, soft power, the PR China, the EU, hegemony

### 1. INTRODUCTION

The COVID-19 virus pandemic has not only caused the collapse of the health system on a global scale, but will most likely result in changes in the world geopolitical scene precisely because of the economic but health consequences in the post-corona period. The large number of infected and deceased from the COVID-19 virus, the decline in production and consumption, the general economic stagnation comparable with the crisis after the Spanish flu pandemic or with the world economic crisis of 1929-1930<sup>1</sup>. Also, the health systems of not only the developing, but also the very rich and developed countries collapsed and were unable to provide adequate healthcare to the ill. The first case of coronavirus was officially recorded in late December 2019 in Wuhan (Duarte, 2020), and the World Health Organization (WHO) declared the coronavirus outbreak a "pandemic" on March 11<sup>th</sup>, 2020 (WHO, 2020). The pandemic has not only resulted in the opening of new issues in the field of health, but also in the opening of numerous political and geopolitical issues as well as the dominance of China and questions

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<sup>1</sup> <https://www.geopoliticalmonitor.com/geopolitics-history-and-the-post-covid-world/>.

referring to the possibility of establishing the next geopolitical world order<sup>2</sup>, multipolar, but with the increasing role and influence of the PR China. Since it is a global pandemic affecting almost all countries in the geopolitical context, health is becoming the most significant geopolitical code<sup>3</sup> that redefines national interests through the identification of external, in the case of coronavirus general threats worldwide. The PR China (hereafter: China), the primary country to emerge stronger from the crisis, is reacting to these threats through health diplomacy. The question of the effectiveness of the radical, authoritarian Chinese and democratic-liberal socio-political model of Western countries also have arisen. Analyzing data on the number of new cases (Worldometer 2021), China has solved the problem of coronavirus by March 2020, at the same time when the countries of the EU recorded the highest number of new cases. Considering its more than 1.4 billion inhabitants, the number of a total of circa 85 thousand confirmed cases and 4 636 deaths looked totally unreal<sup>4</sup>, if we compare it for example with Croatia, which with a total population of about four million and 5 263 deaths from COVID-19, or for example Slovenia, with a population of about two million and 3 667 fatalities (up to February 11<sup>th</sup>, 2021). We noted these data when we first considered writing about this paper. Exactly three months later, when we are submitting the final version of the paper, China still has 4 636 deaths from COVID-19, of which 4 512 are contained to just one province – Hubei, whose capital and largest city is Wuhan, the most likely place of origin of the pandemic. Two other states that are mentioned here as a comparison, have in the meantime recorded many new fatalities (Croatia about two thousand more, total of 7 549 deaths, and Slovenia more than 650 new deaths, a total of 4 302). Nevertheless, it has to be said that all East Asian countries, democratic or not, have contained the pandemic much more successfully than most European or Western states in general<sup>5</sup>. The examples of Vietnam, South Korea, Japan, Singapore, are especially worth noting, among others. Strong, hierarchically organized societies, with a strong respect for authorities and collectivist tradition have proven most resilient in fighting the pandemic. Regardless of the fact whether the numbers regarding fatalities from COVID-19 in the PR China are real or not<sup>6</sup>, the Asia-Pacific region is in the focus of possible changes in international relations through the accelerated transfer of power by Chinese influence, which could become hegemonic i.e. turn into a hegemony<sup>7</sup>, in that area. As Hunt (2021) states: “Vaccines are being acquired through a combination of government funds, donations from local businessmen, Chinese and Western largess, and investment deals with the greatest needs emerging from Indonesia, Malaysia, Myanmar, the Philippines, and Thailand. But the rollout remains in its infancy and is a massive undertaking with governments planning to inoculate up to 70 percent of the region’s 648 million people against COVID-19.” Hence, we might have, due to the pandemic, reached “the end of globalization”: “movement of people across national boundaries has been completely stopped, shipping goods contracted to a tenth of their volume, and global supply chains have been revealed and questioned as countries limit export of medications, holding onto them instead for national consumption” (Schake, 2020: 653), we also have to legitimately question are we in the process of crossing into the new phase of a geopolitical world-order, characterized by multipolarity, protectionism, efforts to achieve self-sufficiency in strategic materials, and products that are vital in the fight against the pandemic,

<sup>2</sup> According to Kurečić (2004), geopolitical order is “the predominant state of geopolitical relations in a historical period. It is also a concept that explains the geopolitical relations that form an order in a certain period of history. The geopolitical order consists of elements and factors that are part of geopolitical issues, and are geographically and geopolitically relevant.”

<sup>3</sup> According to Taylor (1993), there are as many geopolitical codes as there are countries in the world, and the codes of the strongest countries have an impact not only on neighboring countries, but on countries in the region, on the continent or around the world.

<sup>4</sup> <https://www.geopoliticalmonitor.com/the-problem-with-chinas-covid-19-statistics/>.

<sup>5</sup> <https://www.geopoliticalmonitor.com/vietnam-repels-another-enemy-at-the-border-covid-19/>.

<sup>6</sup> <https://thediplomat.com/2021/01/chinas-vaccine-diplomacy-leaves-its-mark-on-asean/>.

<sup>7</sup> Liberal theorists such as Keohane (1984: 34) define hegemony as “a situation in which a state is powerful enough to maintain and willing to maintain the basic rules governing interstate relations.”

which exposed the over reliance not just of certain countries but of the whole continents and trade blocs on (mostly) Chinese-produced products, such as for example protective masks. In Croatia, a pretty bizarre level of dependence on imports of products such as medicine alcohol and baker's yeast has been daylighted as a consequence of the temporary crisis in supply chains, after the first lockdown has been imposed in Europe. For example, in Županja, a small city in Eastern Croatia, the line for the production of medical alcohol, which was disassembled a couple of years ago, was re-assembled with the parts stored in the warehouse of the factory, with the help of (too early) retired workers. First contingents of the alcohol produced on the newly re-assembled production line were shipped to hospitals and clinics in the region for free. Baker's yeast was at the time of the imposition of the general lockdown (spring 2020) not produced in Croatia at all, same as medical alcohol. Two firms, one French and one Turkish are importing the yeast in Croatia, where it is packed in small packages and sold. Nevertheless, it is not produced in Croatia, making the country completely reliant on imports. China, through its health diplomacy, sets and governs the rules set, at the same time influencing international relations precisely by its rising influence in the Asia-Pacific region. According to Bilandžić (2014), the classic variant of the cyclical change of the hegemonic balance (status quo) and disorder through the hegemonic (world) war of superpowers is not valid for explaining the crisis of the international liberal order since the terrorist attacks of September 11<sup>th</sup>, 2001 onwards, but a permanent hegemonic war they generally do not determine the actions of sovereign states due to the proliferation of new subjects in international relations. Chinese influence and given its economic power, increasingly sophisticated science and technology, great human resources, the size and position of the center of world commodity production is on an upward trajectory and will be difficult to stop. The COVID-19 crisis was a strategic opportunity that China used to expand its influence through health diplomacy as a "soft power" tool, creating the image of a benevolent giant in most Asian, but also African and Latin American countries. It remains to be seen how the US and the EU will respond to this new international political situation as some countries have voluntarily accepted Chinese medical support by giving market access through the "One Belt One Road (OBOR)" project and regardless of being members of the EU are already procuring an EU-unapproved Russian and Chinese vaccines.

## **2. HEALTH DIPLOMACY AS A "SOFT POWER" DIPLOMATIC TOOL OF PUBLIC DIPLOMACY**

The term "public diplomacy" first appeared in the early 1960ies. With the emergence and strengthening of the mass media on the international political scene, the commercialization of marketing by governments, accelerated democratic processes, and global change, the U.S. News Agency introduces the term public diplomacy attributed to E.A. Gullion. Gullion's definition is: "a discipline that deals with the influence of public attitudes on foreign policy-making and conduct, encompasses dimensions of external relations outside traditional diplomacy, deals with the influence of governments on public opinion formation in other countries, and private group interactions and the interests of one country with those in other countries, reporting on foreign policy and its impact on the policies pursued by the government of another country, communication among those whose job is communication - such as diplomats and foreign correspondents, and the intercultural communication process. The essence of public diplomacy is a transformative flow of information and ideas" (Sparrow Moses, 2008: 176). According to Signitzer and Coombs (1992: 138), public diplomacy is "the way in which government, individuals, and groups directly or indirectly influence those public attitudes and opinions that directly shape the foreign policy decisions of another government." With the digitalization of diplomacy, new media is being reconceptualized in which the relationship between the public, the state and the media is changing, and the dialogical approach as one of the foundations of public diplomacy is becoming the main tool in attracting audiences

who are increasingly involved in global media on the other hand, it enables states, governments through public diplomacy to create the illusion of a participatory, collaborative atmosphere and thus the implementation of comprehensive branding strategies of states in various areas beyond their borders, and thus the expansion of their interests. The goal of public diplomacy is to reach not only individuals, governments, but the entire population of a foreign country, which nowadays the global media and the rapid transfer of information enable and greatly facilitate. Traditional diplomacy was based on secrecy, while public diplomacy takes place in real time, in front of all people with the help of mass media (Skoko, 2009: 61). It is through the use of new means of mass communication that the so-called new public diplomacy. According to Cull (2009: 12-13) there are key shifts in the practice of public diplomacy. These are: 1) international actors are increasingly non-traditional, and NGOs are particularly prominent; 2) communication with the world public through the mechanisms used by these actors (global technologies and the Internet) has moved to real-time communication, 3) these new technologies have blurred the previously rigid lines between domestic and international news; 4) instead of the old notion of propaganda, public diplomacy increasingly uses concepts on the one hand explicitly derived from marketing – especially the place and branding of the nation - and on the other hand concepts that emerge from theories of network communication; 5) the new terminology of public diplomacy as a language of prestige and the creation of an international image gives way to a conversation about “soft power” and “branding”; 6) perhaps most importantly, the new public diplomacy speaks of a departure from the mode of communication among Cold War actors, with a new emphasis on people’s contacts with the aim of mutual enlightenment, with the international actor in the role of supporter; and 7) this model suppresses the old way of conveying top-down messages, and the main task of new public diplomacy is to “build relationships”. Relationships do not have to be between actors and foreign audiences, but mutual communication between the two audiences could be useful. New diplomacy is characterized by the term “soft power”, whose creator is Joseph Nye, who defines it as the ability to achieve desired foreign policy goals by creating political attractiveness, persuasion, setting a media-public agenda to reshape the preferences of other countries, implement them and agreement with the desired action ”(Nye and Owens, 1996: 21) Therefore, soft power can ultimately be seen as a foreign policy instrument for conducting international relations. In an international environment with such dynamic changes, questions arise about the development of public diplomacy concepts in various fields. Global trends will certainly in the near future lead to the r / evolution of public diplomacy, the area of its operation and functioning in general. One of these areas is certainly health diplomacy, at this time of the COVID 19 virus pandemic increasingly called the “vaccination diplomacy”. Health diplomacy, due to the fact that human health is one of the most sensitive areas, has the opportunity through various activities in the field of public action to help the country build a better image in the international community through assistance programs, certainly as a powerful “soft power” tool can be classified as public diplomacy. Developed countries and international organizations are increasingly applying health diplomacy globally by providing medical assistance during emergencies. Therefore, health diplomacy has become an important tool for improving bilateral / multilateral relations (Drager and Fidler, 2007). Also, Labonté and Gagnon (2010) state that global health diplomacy in terms of the theory of international relations is basically a relationship between global health and foreign policy. With the pandemic of the COVID 19 virus, the issue of global health was raised in 2007. The goals stated in the Oslo Declaration are therefore becoming a priority. Historically, national self-interest (security) has failed to motivate a lasting commitment to international health cooperation (Peterson, 2002). The question remains whether this will happen at the time of the world's largest pandemic or whether some world powers and the situation with the COVID 19 virus, primarily vaccine production

and distribution, will be used for economic and geopolitical dominance<sup>8</sup>. According to Chattu and Knight (2019: 151), health diplomacy in its contemporary context represents “a political activity that meets two goals: improving health while maintaining and strengthening international relations abroad”. The only way to keep it that way is to prevent the commercialization of health diplomacy and return to basic principles, that as a vital part of a country’s foreign policy agenda, it contributes first and foremost to security, only then to diplomacy and only possibly to trade.

### **3. HEALTH DIPLOMACY AND COVID-19 THE EXAMPLE OF CHINA IN RELATION TO CROATIA AND THE WESTERN BALKAN COUNTRIES**

In January 2017, Chinese President Xi Jinping initiated the Health Silk Road and signed a Memorandum of Understanding with the World Health Organization. According to Bing (2020), the primary goals of the Silk Road are the organization of a high-level forum of regional health officials, the establishment of a network of public health coordination in public health emergencies, and capacity building and training. The fact is that since the outbreak of the COVID 19 virus pandemic, China has been providing and donating large amounts of medical care around the world and even to the USA and the EU, and through health diplomacy it is building the status of a responsible world leader. When it comes to the countries of Central and Southeast Europe, according to Stojanović (2020), the first aid that Serbia received was from China, which is not surprising, since China has been building and expanding "One Belt One Road" through its global investment projects for many years. its influence, and what has found fertile ground in countries like Serbia and Hungary, whose leaders nurture close ties with Beijing or Moscow. Less than a month after the first donation of protective medical equipment to Serbia, on April 20<sup>th</sup>, 2020, approximately 60 tons of medical equipment arrived in Croatia, including 3.7 tons donated by the Chinese government to Croatia. Through cooperation with state-owned Chinese pharmaceutical companies, Mehec and Sinopharm, the Croatian government has also procured large quantities of COVID-19 disease protection equipment, the largest shipment of medical supplies from China since the outbreak of the pandemic in Croatia. Chinese entrepreneurs also joined the donations. The Jack Ma Foundation (Alibaba) sent 300 thousand masks, 30 thousand tests and 10 respirators to Croatia, and the entrepreneur Jack Ma himself donated 10 thousand protective visors and 10 thousand protective suits. As Krasnec (2020) states in the same text, Jack Ma, the founder of the large Chinese online shopping company Alibaba, who a few years ago dedicated himself to philanthropy through a foundation named after him, is by far the most famous Chinese person sending aid to Croatia. The list of his donations around the world in the fight against the spread of coronavirus is impressive: he donated 100 million face masks and one million tests for COVID-19 to the WHO, millions of masks and tests and hundreds of respirators in Africa, and the US Center for CDC and New York Disease Control and Prevention, has donated across Latin America and Asia... And so far in Europe, according to a statement from the Alibaba website of April 15<sup>th</sup>, 2020, it has donated equipment to Italy, Belgium, Spain, Slovenia, France, Austria, Denmark, Germany, Ireland, the Netherlands, Sweden, Switzerland, Norway, Portugal, Montenegro and the United Kingdom. From all of the above, the outbreak of the COVID-19 virus pandemic, China has used global health diplomacy to build its benevolent image, but also sought fertile ground for its geopolitical influence in Africa, Asia and Europe. It is undeniable that at the same time, since the whole world was in complete lock down, China was the only one to produce and develop its economic power, especially in the Asia-Pacific region, and rising Chinese influence became more than obvious.

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<sup>8</sup> <https://www.nytimes.com/2021/02/11/world/asia/vaccine-diplomacy-india-china.html>



**LITERATURE:**

1. Bilandžić, M. (2014) Restrukturiranje subjekata međunarodnih odnosa: politički islam. Zagreb: *Vojna povijest*, 42: 6–7.
2. Bing, N.C. (2020) *Commentary: What's behind China's controversial Health Silk Road efforts*. CAN, <https://www.channelnewsasia.com/news/commentary/china-healthsilk-road-what-is-it-push-influence-covid19-coronav-12782968>.
3. Borton, J. (2020), *Vietnam Repels another Enemy at the Border: COVID-19*, <https://www.geopoliticalmonitor.com/vietnam-repels-another-enemy-at-the-border-covid-19/> (July 21st, 2020).
4. Chattu, V.K., and W.A. Knight (2019). Global health diplomacy as a tool of peace. *Peace Review*, 31 (2) 148–157.
5. Cull, N.J. (2009) *Public Diplomacy: Lessons from the Past*. Los Angeles: USC Center on Public Diplomacy at the Annenberg School University of Southern California, Figueroa Press.
6. Drager, N. and D.P. Fidler (2007). *Foreign policy, trade and health: At the cutting edge of global health diplomacy*, <https://www.scielo.org/article/bwho/2007.v85n3/162-162/en/>.
7. Duarte, F. (2020) *Who is 'patient zero' in the coronavirus outbreak?* BBC News. <https://www.bbc.com/future/article/20200221-coronavirus-the-harmful-hunt-for-covid-19s-patient-zero>.
8. Hunt, L. (2021) *China's 'Vaccine Diplomacy' Leaves its Mark on ASEAN*, <https://thediplomat.com/2021/01/chinas-vaccine-diplomacy-leaves-its-mark-on-asean/> (January, 22<sup>nd</sup>, 2021).
9. Ishii, A. (2020) *Geopolitics, History, and the Post-COVID World*, <https://www.geopoliticalmonitor.com/geopolitics-history-and-the-post-covid-world/> (June 2nd, 2020)
10. Keohane, R.O. (1984) *After Hegemony: Cooperation and discord in the world political economy*. Princeton: Princeton University Press.
11. Krasnec, T. (2020) U sedmom avionu pomoći Hrvatskoj iz Kine stigli i respiratori i maske koje je donirao Jack Ma, <https://www.vecernji.hr/vijesti/u-sedmom-avionu-pomoci-hrvatskoj-iz-kine-stigli-i-respiratori-i-maske-koje-je-donirao-jack-ma-1401102>.
12. Kurečić, P. (2004) *Novi svjetski geopolitički poredak: teorijske odrednice*, Zagreb: Hrvatski geografski glasnik 66/1, 103-120.
13. Labonté, R. and M.L. Gagnon (2010) Framing health and foreign policy: Lessons for global health diplomacy. *Globalization and Health*, 6 (1) 14.
14. Mashal, M., Yee, V. 2021. *The Newest Diplomatic Currency: Covid-19 Vaccines*, <https://www.nytimes.com/2021/02/11/world/asia/vaccine-diplomacy-india-china.html> (February 11th, 2021)
15. Nye, J.S. (2004) *Soft Power*. New York: Public Affairs Press.
16. Nye, J.S. and W.A. Owens (1996) America's Information Edge. *Foreign Affairs*, 75 (2) 20-36.
17. Peterson, S. (2002) Epidemic disease and national security, *Security Studies*, 12 (2) 43-81.
18. Romaniuk, S.N. (2020), *Degrees of Fiction: Gauging the Accuracy of China's COVID-19 Statistics*, <https://www.geopoliticalmonitor.com/the-problem-with-chinas-covid-19-statistics/> (April 24<sup>th</sup>, 2020)
19. Schake, K. (2020) Building a More Globalized Order. In: Brands, H.; Gavin, F. J. (eds.) *COVID-19 and World Order*. Baltimore: Johns Hopkins University Press, 649-681.
20. Signitzer, B.H. and T. Coombs (1992) Public Relations and Public Diplomacy. Conceptual Convergences. *Public Relations Review*, 18 (2) 137-147.
21. Skoko, B. (2009) *Država kao brend: Upravljanje nacionalnim identitetom*. Zagreb: Matica hrvatska.

22. Vrabec-Mojzeš, Z. (2008) *Javna diplomacija i mediji*. MediAnali : međunarodni znanstveni časopis za pitanja medija, novinarstva, masovnog komuniciranja i odnosa s javnostima. URL: <https://hrcak.srce.hr/39354>
23. World Health Organisation (2020). *The WHO's available statistics shows that over 45% of WHO member states have less than 1 physician per 1000 population*. [https://www.who.int/gho/health\\_workforce/physicians\\_density/en/](https://www.who.int/gho/health_workforce/physicians_density/en/)
24. Worldometer. (2021). *COVID-19 coronavirus pandemic*. [https://www.worldometers.info/coronavirus/?utm\\_campaign=homeAdvegas1?](https://www.worldometers.info/coronavirus/?utm_campaign=homeAdvegas1?)
25. <https://hrvatska-danas.com/2020/10/10/utjecaj-korona-krize-na-promjene-u-medunarodnim-odnosima/>
26. <https://www.cambridge.org/core/journals/international-organization/article/health-diplomacy-in-pandemical-times/A82469023B94AA29F23A52AF0C4B3F27>
27. <http://www.kina-danas.com/stigla-kineska-pomoc-hrvatskoj-za-borbu-protiv-covid-19/>
28. <https://www.vecernji.hr/vijesti/u-sedmom-avionu-pomoci-hrvatskoj-iz-kine-stigli-i-respiratori-i-maske-koje-je-donirao-jack-ma-1401102>

## **SUICIDE REPORTING IN CROATIA (A CASE STUDY: BJELOVARSKI LIST, 2009-2015)**

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### **ABSTRACT**

*The topic of suicide reporting in Croatia was explored by the method of content analysis of the weekly journal Bjelovarski list, covering the publication period between 2009 and 2015. We discovered a total of 55 articles that were viewed through the prism of the guidelines on suicide reporting issued by the World Health Organization, aiming to evaluate the level of observance of these guidelines within the journalistic practice. The starting point of the research was the empirically-based expectation that the guidelines were likely to be inadequately applied, and this hypothesis was questioned – and finally confirmed – across three fundamental questions and fourteen supplementary questions used in the design of the Analytical Matrix. The content extracted from the sample was categorized and quantified accordingly and subjected to qualitative analysis that produced answers to all individual questions. The results of this research can be taken to point to a lower degree of negative media trends as opposed to the overall media space in Croatia and provide an indication, or a relative measure to the existence of more alarming trends in more recently founded publications that lack the tradition and cultural standing of Bjelovatski list. In that sense, this research project has the value of a pilot project that invites broader, all-encompassing research into suicide reporting in Croatia.*

**Keywords:** *suicide, textual content, sensationalism, media literacy*

### **1. INTRODUCTION**

*Preventing Suicide, A Resource for Media Professionals* is a set of guidelines that was created for media professionals and published in 2008 by the World Health Organization and the International Association for Suicide Prevention. This publication aimed to present suicide as a delicate public health issue and to raise the awareness of media professionals concerning the relations between how information on suicidal events is publicly communicated and the effectiveness of preventive programmes that seek to reduce the frequency of such tragic incidents to the lowest possible minimum. The Croatian The Agency for Electronic Media and UNICEF created a media literacy portal (medijskapismenost.hr) where, among other topics, attention has been drawn to the topic of suicide and to the possibly destructive influence of media reporting in a text written by Nataša Jokić Begić: *Research reveals that suicide reporting often leads to new suicides, especially among adolescents and younger adults*. The author of this article criticizes the usual media approach to suicide and provides guidelines for journalists that largely coincide with ones provided in the WHO publication. The requirements are as follows: suicide reporting need to adopt an educational approach; sensationalist approach needs to be avoided and emphasis put on possible solutions of problems that have been documented to lead to suicide; reportings need to be as concise as possible; frontpage headings should be avoided; suicide should never be presented as a solution to any personal problem, etc. The central position of media in creating and voicing all information, but also in shaping ideas, values, and attitudes that can affect human relations as well as people's self-evaluation (McQuail 2012, p. 82), is beyond questioning.

This raises the issue of responsibility on multiple grounds as it touches numerous audiences, becoming especially relevant when reaching vulnerable individuals caught up in situations that they find hard or impossible to deal with. The fact that media discourse can affect their decision-making and provide preventive educational input makes the issue highly worthy of attention. It is however also necessary to note that studies on suicide reporting that question the relations between media discourse to ethical guidelines are scarce and in many countries non-existent. One of the first was based on research that was undertaken in Austria in 1986 (Phillips & Carstensen); in 1998 Etzersdorfer & Sonneck explored the frequency of the word suicide' in Viennese papers and took the topic further to explore the broader ethical context in 2007 (Niederkrötenhaler & Sonneck). A study dating from the year 2000 (Michel, Frey, Wyss & Valach) was based on an investigation of the Swiss media. A study signed by Jamieson, Jamieson & Romer based on analysis of articles on suicide published in 1990, 1995, and 1999 in *The New York Times* was published in 2003. In 2010, Tatum, Canetto & Slater presented their analysis of several American regional newspapers, including the nationally distributed *USA Today*, and explored their writing on suicide on samples from 2002 and 2003, aiming to establish the correlation between media reporting and the *U.S. Media Guidelines Key Recommendations*. So far, only a single article signed by Jasna Burić (*Media reporting on suicide among the minors*, 2008) discussed the topic of suicide reporting, focusing on the population of minors. Besides this, several student graduation papers have been written on the topic. The hereby presented research is, therefore, the first to explore the problem of suicide reporting, unlimited to a specific target group, in Croatia. Although our sample is a relatively small one, it is certainly also an indicative one, and seeks to provide an incentive for broader research that would cover all relevant media channels, and help in establishing ethical standards across the Croatian media space.

## 2. ON 'BJELOVARSKI LIST'

Bjelovarski list was first published on August 27, 1949, and it is the only Croatian paper that has continuously, for more than 70 years, been reporting on political, economic, social, cultural, and sports events, to the present day. It is an inescapable source of information for journalists, students, pupils, and scientists, and also the best-read weekly publication in the Bjelovar-Bilogora County. It is, therefore, in no way surprising that two cultural institutions, The People's Library *Petar Predradović* and the State Archives in Bjelovar, sustained by the Croatian Ministry of Culture, undertook the task to digitalize this long-lived weekly publication from Bjelovar. The first stage of digitalization took place in 2019 covering all issues between 1958 and 1980, while the second stage was planned for the year 2020. All issues on the period between 1981 and 1991 have been stored in the Bjelovar library and the Archives.<sup>1</sup> The relevance and the standing of this publication, based on its tradition, is the main reason why we took interest in its content and selected it as the source of our research on suicide.

## 3. RESEARCH QUESTIONS AND GOALS

The basic presumption of the research is the following: Suicide reporting in Bjelovarski list between 2009 and 2015 did not abide by the applicable ethical guidelines. Three fundamental research questions and fourteen auxiliary ones were formed to test the initial presumption. The goal of the research was to carry out a content analysis of all articles on suicide published during the mentioned period, to obtain insight into how this otherwise respected weekly journal engages with the topic. In this paper, we will present and interpret the results that contribute to the detection of trends in contemporary journalism and point to the need to raise the level of critical thinking and the understanding of media literacy concerning both the journalists and the general audience.

<sup>1</sup> Source: <https://www.culturenet.hr/default.aspx?id=93689>. Accessed on Dec. 7, 2020.

Fundamental research questions	Auxiliary research questions
a) What elements, if any, of sensationalism can be detected within the textual content and across the accompanying photographic material in articles published in Bjelovarski list?	<ol style="list-style-type: none"> <li>1. Does the word 'suicide' appear in the article headings?</li> <li>2. Are the heading levels (main heading, introductory heading, subheading) and types of headings (nominal, informative, advertorial, indeterminable) formed to inspire shocking effects?</li> <li>3. What elements of suicidal events are depicted in accompanying photographs (victims, event sites, next of kin, witnesses), and what is their level of explicitness?</li> </ol>
b) Is the manner of suicide reporting in Bjelovarski list in contradiction to the existing ethical standards applicable to journalism?	<ol style="list-style-type: none"> <li>1. What is the dominantly used genre?</li> <li>2. How are the articles positioned in the paper (page, section)?</li> <li>3. Are the articles signed?</li> <li>4. Are the witnesses directly included in the reports?</li> <li>5. Is the identity of the victim revealed?</li> <li>6. Does suicide reporting include reporting on minors?</li> </ol>
c) What is the level of consistency between article headings and textual content and what level of responsibility is exercised?	<ol style="list-style-type: none"> <li>1. Does the article point to parallels to other comparable events?</li> <li>2. Does the article provide helpline information available to individuals with suicidal thoughts?</li> <li>3. Do articles refer to possible illnesses that suicide victims suffered?</li> <li>4. Does the article reveal the method of suicide?</li> <li>5. Is data provided on suicide sites/locations?</li> </ol>

*Table 1: Fundamental and auxiliary research questions.  
(Source: Authors)*

#### 4. METHODOLOGY

We used the method of content analysis and applied it to all articles on suicide published in Bjelovarski list between 2009 and 2015, which are stored on the People's Library Petar Preradović in Bjelovar, where the research was carried out manually, and each article analyzed following the pre-set criteria. Content analysis is standardly used in social research when applied to textual or visual material, to detect and establish the existence of characteristics by which the selected material complies with or differs from a pre-set standard (Halmi 2003, p. 379). The procedure involves the transformation of qualitative empirical data into quantifiable data, that enables systematization and scientific objectivization (Berelson 1959). Although Berelson's definition of content analysis emphasizes the aspect of quantification, the more recent trends point to the importance of detailed in-depth observation of the research problem that can be achieved using mixed methods (see for example Altheide, Schneider 2013, or Graffigna and Riva 2015). Bearing all this in mind, the authors approached the task of organizing empirical evidence on symbolic communication (Halmi 2003, p. 379) from which the backbone of this research, the analytical matrix, was developed. The steps were the following: the initial presumption was used to define the sample, which resulted in defining the elements of content that needed to be extracted systematically and used as units. The research questions were applied in the development of the analytical matrix, which enabled the data to be referenced and cross-referenced, providing grounds for interpretation.

## 5. RESEARCH RESULTS AND DISCUSSION

During the observed period, 55 texts on suicide were published in Bjelovarski list, and 38 of them refer to accomplished suicidal events. The rest of the articles refer to suicide attempts, suicide threats, warnings on high suicide rates, sometimes specifically referring to high suicide rates among war veterans.

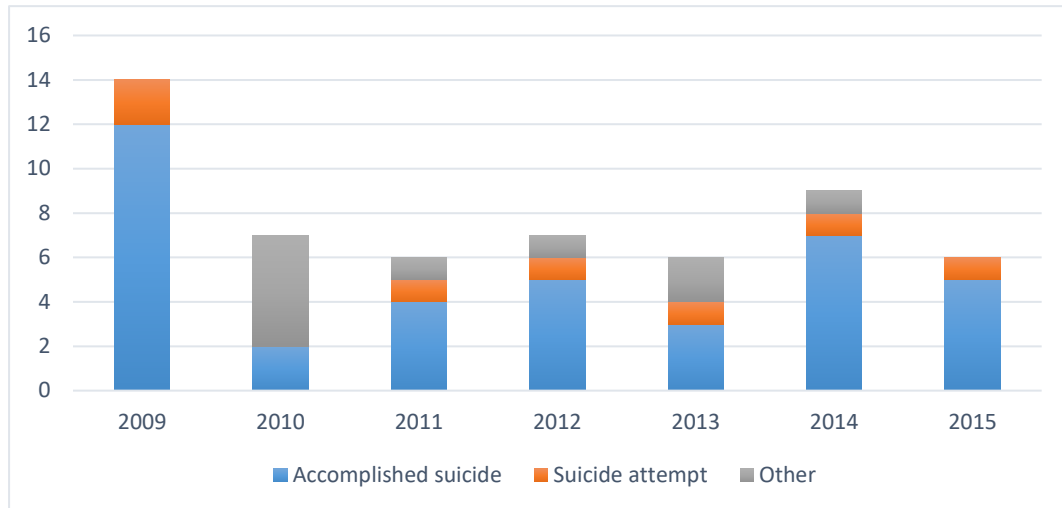


Figure 1: Texts on suicide published in Bjelovarski list between 2009 and 2015.  
(Source: Authors)

### 5.1. Reporting modes and accompanying material (photographs)

The goal was to discover answers to the first fundamental research questions and the related auxiliary questions. Table 2 shows quantitative data obtained by the analysis of headings, article positions, and technical features.

HEADINGS, POSITIONS AND TECHNICAL FEATURES		
HEADINGS: LEVELS	N	%
Heading only	23	41,82
Heading and subheading or introductory heading	28	50,91
Heading, subheading, and introductory heading	4	7,27
HEADINGS: TYPES	N	%
Nominal/Neutral	10	18,18
Informative/Assertive	8	14,55
Advertorial/Aggressive	35	63,64
Indeterminable	2	3,64
PHOTOGRAPHS: PRESENT	N	%
Victim photo	10	18,19
Site of event	19	34,55
Next of kin	3	5,45
Neighbours	1	1,82
Other	7	12,72
Absent	15	27,27

Table 2: Headings, positions, and technical features. Total No. of articles (N=55)  
(Source: Authors)

In our first group of questions, we investigated the language of the headings and focused on accompanying features of the articles, primarily on photographic material. The headings are viewed as a semantic “ticket into the text” (Silić 2005, p. 89). We adopted Silić’s categorization of media headings, where he distinguishes between *nominal*, *informative*, and *advertorial* headings. Nominal headings nominate the content, and they are usually phrased by the use of nouns and adjectives. Informative headings tend to send across messages, and this type is usually phrased using verbs and tenses, and sometimes interrogatives. Advertorial headings are assertive and usually expressed via illocutionary forms of speech, such as imperatives; these are also often accompanied by exclamation marks. To underline the effects of choice between nominal, informative, and advertorial headings, we additionally added attributes to accompany each category, and classified nominal headings as closest to *neutral*, informative ones as closest to *assertive*, and advertorial ones as closest to *aggressive*. We also observed if the articles were equipped with subheadings or perhaps added introductory headings. Upon classifying the heading type, we classified the texts by genre and observed the position of individual articles within the journal. Closer analysis of the headings leads to the conclusion that the headings are, for the largest part, mainly focused on creating shocking effects that are likely to draw in the audience. This point can be duly illustrated by quoting some of the headings:

INTRODUCTORY HEADING	HEADING	SUBHEADING	SECTION	DATE
	<i>Mario shot himself in the heart and luckily missed</i>	<i>Attempted suicide</i>	FRONTPAGE	January 26, 2009
<i>A Week of Darkness: A man blew himself to pieces, a woman hanged herself</i>	<i>Dušek, the Neighbour: Only His Sneakers Remained...</i>	<i>In Gornji Draganec, a 47-year old male wounded himself with a bomb, and in Srijednska, a 67-year-old woman hanged herself in a plum orchard</i>	CURRENT AFFAIRS	May 11, 2009
	<i>Ivan set fire on a property loaded with explosives and hanged himself immediately after</i>	<i>After an argument with his wife, he set fire on the property and hanged himself</i>	FRONTPAGE CRIME	July 19, 2010
	<i>Nobody knows why a quiet youth killed his stepmother and then himself</i>		CRIME	January 10, 2011
<i>The children saw everything</i>	<i>Unheard-of crime in Kašljevac.</i>	<i>A man stabs his wife to death, throws her body into the garbage, and hangs himself</i>	FRONTPAGE	June 4, 2012
	<i>He tied a knot around his neck and hanged himself from the balcony of his vacation home</i>		FRONTPAGE	December 24, 2012
<i>A new tragedy in Bjelovar</i>	<i>He blew himself up with a bomb in his orchard</i>		FRONTPAGE	February 11, 2013
	<i>He badly wounded his stepson and then hanged himself in the family home</i>		CRIME	January 20, 2014

Table 3: Headings by Level: A Selection.  
(Source: Authors)

If we go on to observe the photographic material that accompanies these articles, it becomes obvious that photographs most commonly feature the suicide site, or the victim, or their next of kin, or sometimes the neighbors. On May 18, a disturbing photograph was published alongside a text of a high-school graduate after the graduation celebration. This photo shows a high-school graduate on the *Partizan* playground in Bjelovar, the traditional site of the so-called “norijada” (the term is used to refer to the traditional informal gathering of graduates that tends to run rather wild). It comes with the following caption:

*Three years ago, Tatjana Juričan, a high-school graduate, took her own life by swallowing approximately 100 pills.*

Most other texts on suicide, besides the quoted examples, were accompanied by photographic material. Quite an outstanding example, but also an isolated one, is that of a frontpage photograph of the victim, showing the victim’s home, alongside the introductory heading stating:

*A tragedy in Jošine; Why did you do it, Ivica? The main heading elaborated further on the event: He blew himself away with a bomb, his one-year-old son will not remember him.*

A crude photograph was added to the text of June 4 (The old man cuts his veins and dies in the General Hospital), showing a bleeding arm with deadly cuts. The first text on suicide that was published in 2013, dated January 14 (heading: At least ten persons committed suicide in course of the holiday season) was part of the section 7 days, on page 5 of the paper. It provided information regarding the number of persons who took their own lives at the end of 2012 pointing to the fact that during this period there were more such cases than there had been throughout the entire year. The accompanying photograph – showing a person of female sex laying over a table and vomiting, different kinds of pills scattered around her – was most disturbing. Most of the texts published in 2014 and 2015 were accompanied by photographic material depicting the deceased or the suicide survivors. The analysis of this category reveals a high level of *explicitness and trackability* of articles on suicide that correlates with the presence of the keyword ‘suicide’ and other explicit descriptors of the act. It also shows the prevalence of aggressive *heading style* (advertiser headings were detected in 63,64% of the cases), all of which is augmented by ‘visual emphasis’ that leans towards dramatic, attention-capturing content.

## 5.2. Presentation mode

At this stage, the goal was to find answers to the second fundamental research question, and to accompanying auxiliary questions. Table 4 shows quantitative data obtained by the analysis of genre, authorship, and the inclusion of witnesses and victims in the reports.

*Table following on the next page*



AUTHORSHIP, VICTIM IDENTITY, AND WITNESSES (INTERLOCUTORES)		
<i>GENRE</i>	<i>N</i>	<i>%</i>
News (compact)	19	34,55
Report (detailed)	32	58,18
Positioning	4	7,27
<i>AUTHORSHIP</i>	<i>N</i>	<i>%</i>
Articles signed by initials	27	58,69
Fully signed articles	19	41,31
Unsigned articles	9	16,36
<i>WITNESSES/ INTERLOCUTORS</i>	<i>N</i>	<i>%</i>
Articles with witnesses/interlocutors included in the text	11	25,45
<i>VICTIMS</i>	<i>N</i>	<i>%</i>
Articles exposing victim identity	34	61,82
Articles related to the suicide of minors	3	5,45
Articles related to youth below the age of 24	4	7,27

Table 4: Authorship, victim identity, and witnesses (interlocutors). Total No. of articles (N=55)  
(Source: Authors)

Seeing that most of the articles published in Bjelovarski list in course of the observed period do not abide by the ethical standards on suicide reporting, but appear to lean towards sensationalism, it is rather easy to observe that the fully signed articles are those, and fewer, that tend to assume an educational approach to the topic, refer to the negative statistical data and warn against the danger of suicide (e.g., on February 1, 2010: *Four pupils attempt suicide each year*; February 15, 2010: *Devastating: the County with the highest suicide count*; February 14, 2012; *Fifty-three veterans committed suicide*). As far as the identity of the victim is concerned, it was revealed in as many as 34 articles and can thus be concluded that the victim's identity was not respected. Elements by which the identity of the victim can be revealed, or pieces of indirect information that may be revealing in itself, are the following: direct publishing of the name (first, last, or both) of the victim, publishing of the victim's initials, or their age, the area the victim lived in, reference to the victim's parents or family members, nicknames, etc. It is also worth noting that 7 (12,73%) out of 55 articles related to the suicide of minors (3 articles, 5,45%), or youth below the age of 24 (4 articles, 7,27%), which adds up to almost one-fifth of the total number, and reveals a rather alarming ratio seeing the potentially grave consequences of such news on adolescent suicide. In the discussions on the influence of the media on suicidal behaviour, adolescents constitute a particularly vulnerable group, which is also sustained by the statistics that show triplication of such events in age-group 15-24 (Marčinko et al. 2011, p. 196). The alarming rise is largely attributed to the media that can feed the adolescents with the idea of suicide, seeing the susceptibility of his age-group to external influences (Kocijan via Ibid, p. 197). The hesitance to expose authorship appears to be related to the *level and mode of elaboration* seeing that the shallow approach prevails overwhelmingly, and in-depth analysis is almost non-existent, while the mode of elaboration leans on the selection of shocking details to attract the audience in a sensationalist manner. The latter has also a lot to do with the low degree of *testimonial relevance*, which is, largely, because the witnesses, when available, are confronted with shallow questions and are mostly used to emphasize, rather than to analyze the event.

### 5.3. Heading-content consistency and the issue of responsibility

This part of the research explored the data related to the third fundamental question, including auxiliary questions. At this stage, qualitative content analysis was applied. The comparison between the headings and the textual content shows that the correspondence between them was high. A far greater problem was, however, the content itself, which was usually inappropriate, diverging not from the headlines but the ethical guidelines regarding the treatment of the topic of suicide, and diverging from the *Code of honour of Croatian Journalists*. This observation can easily be substantiated by a brief analysis of the content of some typical articles. For example, in the article that appeared in Issue 37 of *Bjelovarski list* on January 26, 2009, under the heading, *Mario shot himself in the heart and luckily missed*, attempted suicide was described. The article reports on journalists visiting a coffee shop on Slavenska cesta to investigate the event:

*Tracing numerous versions of the event that shocked many a citizen of Bjelovar, and especially the inhabitants of the out-of-town settlement Novoseljani, we attempted to find out what had really happened around 19:45 on Monday (...) where the 30-year-old Mario B. fired a shot from his gun attempting to take his own life.*

In this report, the place, and the time of the suicidal event were explicitly mentioned, as well as the name and the age of the protagonist. Furthermore, the paper published a statement from a waitress who condemned the event, and the entire text was filled with judgemental remarks on the victim. The speculative dimension comes through even in the closing statement:

*The fortune within the misfortune can be found in the fact that Mario's hand most likely quivered, which is what saved his life since the bullet aimed at his heart missed the target by only a few centimetres and hit his lung.*

Another article describes a suicide of a high-school graduate that took place on May 18, 2009 (heading: *A young man hanged himself over unrequited love?*). This text goes into much detail in describing how this suicide was carried out:

*(...) the young man hanged himself on Saturday, not long after 1.00 a. m, from the eaves of the family house.*

The article not only provides a detailed description of how the suicide took place and the data on the deceased but also engages in speculation over the reasons for the young man's act. All these features are typical of tabloid reporting and reveal a sensationalist attitude, contributing to the danger of copycat effects that the young audience is liable to. Along the same line of argumentation, this kind of reporting goes against *The Code of Honour of the Croatian Journalists' Association*, being in direct conflict with the Code's Article 16 that specifically states that the reporting on suicide and suicidal attempts should not provide any specific data on the victim and that any identifiable features should be reduced to the utmost minimum, especially when referring to cases of children or the youth. The eighth page of the crime section, dated January 10, 2011, featured an article with the following heading: *Nobody knows why a quiet youth killed his stepmother and then himself*. The text itself contains the following:

*Thirty-five-year-old Alen Kraševac was in the apartment of his father, Josip Kraševac, on the second floor of the apartment building in Nazorova Street around 14:30 when he fired a shot from his gun and killed his 53-year-old stepmother Gordana Kraševac, after which he committed suicide.*

In this example, not only the full names of all the parties involved in this tragedy are offered publicly, but also the names of the persons who were not involved (the father of the protagonist of this murder-suicide case), as well as their age, and the exact time and place of the event. The article also states that *Alen's gun was illegally possessed*, as well as information on the workplaces of the deceased parties. Further investigation of the content of the articles reveals that most of them (38) are oriented on the depiction of the protagonist and the event; six (6) of them point to the comparison with other similar events. In almost all texts, the suicidal event is described in specific terms, and in most of them, the exact location of the event is provided. Only a single text (1) provided reference to help channels/contacts for suicidal individuals, available in the Republic of Croatia; only two articles (2) provided sporadic reference to PTSD yet with no attempt to engage in any kind of analysis of the condition and of the problems that caused it. The articles also revealed that there is a difference in the modalities of reporting between events involving civilians and the military: the first aspire to a romantic depiction of suicidal events, while the second use negative terms and speak of the dysfunctional medical treatments (Ramchand, Ayer, Fisher, Osilla, Barnes-Proby, Wertheimer 2004, p. 25). In evaluating the material in terms of *consistency*, it is necessary to point out that 'consistence', as such, is not a positive or a negative feature, but that the evaluation of this feature leans on a pre-set value to be extracted from the text. When it comes to the relations between the headings and the textual body of suicide reports, these values are usually highlighted by headings and elaborated in the text, and when that value is negative – if the text follows up on it – the heading-text consistency becomes a way to fortify, rather than to question the negative value or to affirm a positive one. It is the negative aspect that emerges from the analysis of our sample, and it reveals a consistently sensationalist approach regardless of the detailing that may focus on, and highlight (via heading), the suicidal method or some other circumstance of suicide, with little or no observation for the ethical consideration of victims' identities or the possible public impact of the stories. Omission to publish helpline data is consistent with the latter. Situating the overall insight into the evaluative module on *consistency and responsibility*, therefore, yields yet another negative stride to be added to the cluster of evaluated features across all modules, categories, and subcategories that we observed via this research.

## 6. CONCLUSION

The results of our research highlight the urgency to put the general course of Croatian journalism under serious observation. Examples of shallow sensationalist writing point to the disturbing trend that is likely to escalate further if measures are not taken to promote ethical standards and critical thinking among the Croatian journalists. Although this research covered a rather limited sample of Croatian journalism, it can be taken as evidence of not the worst, but of the less extreme negative practices in Croatian journalism. There are, nowadays, many new publishers who were "born into the trends", and it can justifiably be presumed that the results of a broader investigation would most likely lead to even more alarming conclusions. In questioning the approach that we detected in Bjelovarski list, we, therefore, sought to provide an incentive for such a broader research to be undertaken, as well as to ignite a much-needed public discussion on the overall media culture in Croatia and on the galloping sensationalist trends that appear to have infiltrated even the journals of a higher cultural standing. The analysis of the selected sample of articles revealed a non-selective approach to the suicide narratives. Everything is, apparently, subject to publication: from suicidal attempts to presumptions on the contents of the farewell letters. The cases that are judged as unique and for some reason "interesting" find their way to the frontpages of the journals, to attract more public attention. The language is too often explicit, shallow, and trackable; the headings are usually dramatic and attention-seeking; the photographs capture private areas and shocking details; the focus of writing is on the scandalous effects; there is none or far too little engagement in the analysis of

causes, effects; almost no attention is given to preventive action; witnesses are asked to engage in hearsay. In most cases, suicide is taken at face value: mental problems are not seriously discussed; guidance towards solutions alternative to suicide, or, at the very least, reference to help channels available in the community, is not provided. Apparently, suicide reporting in Croatia has submitted to the negative processes, and such an approach can be qualified as unprofessional in its disregard of the published World Health Organization ethical standards, and ethics in general. Hence, this research revealed a high level of deviation from almost all recommendations included in the guidelines on suicide reporting provided by professional organizations. The negative trends prevailed in every category that we examined (explicitness and trackability; heading styles; visual emphasis; level and mode of elaboration; general visibility: author's exposure; victim's exposure: testimonial relevance, a consistency and responsibility), adding up into a negative synergy amongst all categories. The media pursuit of audiences appears to have arrived at a level in which it negatively affects both the journalists' and the editors' awareness of the public responsibility of media writing, resulting in a notable decline in ethical standards of public communication. This is not to say that suicide is beyond discussion or beyond reporting: while tabooization of the topic is hardly a solution, seeing that it could result in unhealthy suppression of knowledge on the events that do occur and affect the public, superficial and sensationalist reporting can lead to suppression of a different kind: that of responsibility. It is in the public interest of both the media and the readers that the victims are offered appropriate help rather than submitted to further victimization, and that the public is not intoxicated by writing that has been known to lead to added unwanted effects rather than to their eradication. The inevitable question is: When negative trends take over, can there be an improvement? In addressing this question, it seems useful to point out that our research yielded results that directly contrast the ones that were derived from the extensive research on suicide reporting in Australia, published in 2002. The research covered Australian newspapers, radio, and television), and it was entitled *Reporting on Suicide in the Australian Media* (Pirkis, Francis, Blood, Burgess, Morley, Stewart, Putins 2002). Even though room for improvement was also observed in the Australian research (e.g. journalists/editors often fail to provide helpline information, and tend to succumb to detailing when a celebrity status of a victim is involved), it appears that the Croatian media have a long way to go when it comes to avoiding overly explicit language and photographic material, and very much so when it comes to shaping the headlines. However, this also shows that higher standards are achievable, and that the ethical threshold can be raised. While further research into the Croatian situation is certainly necessary not only to raise the general awareness of the problem but also to produce new insights that can point more deeply to its nature, the long-term solution lies in developing methods that can help raise the level of understanding of both the journalists and the public, to include education but also professional and civil surveillance over the media practices in Croatia in the detection of questionable practices and in the voicing as well as safeguarding of the required ethical standards. The critical research-based approach to sensationalist suicide reporting that we aimed to demonstrate is hopefully a step, among many others that need to be taken, towards achieving such goals, and towards a deeper understanding of media literacy, based not only on sound and relevant information but also on responsibility and life-affirming values.

## LITERATURE:

1. Altheide, D. L., Schneider, C. J. 2013. *Qualitative Media Analysis* (Second Edition). Los Angeles, London, New York, Singapore, Washington DC: Sage.
2. Berelson, B. 1959. *The State of Communication Research*. Public Opinion Quarterly. Vol. 23: 1-6.

3. Burić, J. 2008. Medijsko izvješćivanje o suicidu maloljetnika. *MediAnali: međunaordni znanstveni časopis za pitanja medija, novinarstva, masovnog komuniciranja i odnosa s javnostima*, Vol. 2. No. 4: 209-214.
4. Etzersorfer, E., Sonneck, G. 1998. Preventing suicide by influencing mass-media reporting. *The Viennese experience 1980-1996. Archives of Suicide Research*. 4:67-74.
5. Graffinga, G., Riva, G. 2015. Social media monitoring and understanding. An integrated mixed methods approach for the analysis of social media. *International Journal of Web Based Communities*. 11(1): 57-72. doi: 10.1504/IJWBC.2015.067083
6. Halmi, A. 2003. *Strategije kvalitativnih istraživanja u primijenjenim društvenim znanostima*. Jastrebarsko: Naklada Slap.
7. Jamieson, P., Jamieson, K.H., Romer, D. 2003. The responsible reporting of suicide in print journalism. *American Behavioral Scientist*. 46: 1643-1660.
8. Jokić Begić, N. 2009. Medijska pažnja i samoubojstva. Psihologija, mediji etika, iskustva I promišljanja za bolju suradnju. Društvo psihologa Istre – Associazione psicologi dell'Istria. Naklada Slap: 92-8.
9. Marčinko, D. et al. 2011. *Suicidologija*. Zagreb: Medicinska naklada.
10. Michel, K., Frey, C., Wyss, K., Valach, L. 2000. An exercise in improving suicide reporting in print media. *Crisis*. 21(2): 71-9. doi: 10.1027//0227-5910.21.2.71
11. McQuail, D. 2012. *McQuail's Mass Communication Theory*. 6th Edition. Los Angeles, London, New Delhi, Singapore, Washington DC: Sage.
12. Niederkrotenthaler, T., Sonneck, G. 2007. Assessing the impact of media guidelines for reporting on suicides in Austria: Interrupted time series analysis. *Australian and New Zeland Journal of Psychiatry*. 41(5):419-28. doi: 10.1080/00048670701266680
13. Pirkis, J., Francis, C., Blood W. R., Burgess, P., Morley, B., Stewart, A., Putnis, P. 2002. Reporting of Suicide in Australian Media. *Australian & New Zeland Journal of Psychiatry*, Vol: 190–97. doi: 10.1046/j.1440-1614.2002.01000.x.
14. Phillips, D.P., Carstensen LL. 1986. Clustering of teenage suicides after television news stories about suicide. *New England Journal of Medicine*. 315(11): 685-89. doi: 10.1056/NEJM198609113151106
15. Ramchand, R., Ayer, L., Fisher, G., Osilla, K. C., Barnes-Proby, D., Wertheimer, S. 2015. Suicide Prevention After A Suicide. *Suicide Postvention in the Department of Defense*, RAND Corporation.
16. Sartorius, N. 1996. Suicide as a public health problem :an International perspective. *Arch Ind. Psychiatry*. 3 (Google Scholar).
17. Silić, J. 2005. *Funkcionalni stilovi hrvatskog jezika*. Zagreb: Disput.
18. Tatum, T. P., Canetto, S.S., Slater, D.M. 2010. Suicide Coverage in U.S. Newspapers Following the Publication of the Media Guidelines. *Suicide Life Threat Behavior*. 40(5): 524-34. doi: 10.1521/suli.2010.40.5.524

# TESTING FOR COMPETITION IN BULGARIA BANKING INDUSTRY: THE PANZAR-ROSSE APPROACH – NEW EVIDENCE

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## ABSTRACT

*This paper evaluates the level of competition in the Bulgarian banking sector using the Panzar-Rosse H statistic. Three versions of the empirical model were the estimated-pooled regression model, fixed effect model, and random effect model. The dataset used in the analysis covers more than 90% of the country's banking sector for the period 2013–2019. H-statistics is the lowest value (0,688) using Pooled OLS model, but this model is the least reliable. The H-statistics obtained from other two models are 0,707 for the random and 0,788 and fixed effect model. The three versions of the empirical models support the hypothesis of monopolistic competition in the Bulgarian banking market. Based on the H-statistic, the most important factor for banks with a positive influence on interest income is the banking size. We tested the validity of the P-R model in the sense that the Bulgarian banking market is in the long-run equilibrium.*

**Keywords:** bank competition, H-statistic, The Panzar-Rosse approach, Bulgaria

## 1. INTRODUCTION

At the outset, it is good to consider banks' role as economic units and the ongoing debate on their contribution to the country's economy. The motivation behind our research is limited literature tackling the competition of the Bulgarian banking sector. This research aims to provide empirical evidence on the level of competition in the Bulgarian sector. Our contribution to this paper is twofold:

- First, it goes beyond the existing literature in that it uses the most recent dataset to assess the level of competition in the Bulgaria banking sector by using a larger sample of banks;
- Second, in order to test the robustness of the empirical findings, it combines three different econometric techniques – Ordinary Least Squares (OLS), Fixed effects (FE), and Random effect to a reduced-form revenue equation by using the Panzar-Rosse approach.

### 1.1. The New Empirical Industrial Organization approach

In general, there are two approaches in the scientific literature to describe banking activity: the so-called “production approach” and the “intermediation approach” Freixas (1997, p. 77-79). Colwell and Davis (1992, p.114) raised the legitimate question of whether banks should be treated as companies that use labor and capital to offer different types of deposit and credit services the so-called “production approach” nearly 40 years ago. Thus regarded, banking activity could be measured by the number and size of all types of services (numbers of accounts and transactions per period). On the other hand, in the so-called “intermediation approach”, banks are seen as intermediaries of financial services and not as deposit and credit services providers. One of the main differences between the two approaches is how bank deposits will be treated. As later pointed out (Mamatzakis et al., 2005), the production approach output is measured by the number of accounts or related transactions, and the total costs are all operating costs used to produce these outputs. In the intermediation approach, the value of loans and investments is used as an output measure; labor capital and financial capital are inputs to this process. Hence, operating plus interest costs are the relevant cost measure. Basically, two approaches are used to measure bank competition: structural and non-structural indicators. The main advantage of structural indicators is that they are easy to apply and they are widely used,

especially in the last 20 years of the twentieth century. One of their main disadvantages is the accurate market definition. Defining the relevant geographical market (local, regional, or national) as well as the product market can be difficult. The new so-called non-structural approaches to bank competition assessment entered the scientific literature along with the theory of the New Empirical Industrial Organization. They are mostly applicable in empirical testing of specific conditions in a given market. This can be done in the presence of aggregated industry data or individual data of individual banks, as in our case. One of the most popular non-structural tests used to assess the banking industry competition is the Panzar and Rosse model. This study views the banking sector through the “intermediation approach” lens, thereby examining the three input components (funds, labor, and capital). In this case, we use the third of approaches that have been proposed for measuring competition in the banking sector. The other two are:

- a) To consider factors such as financial system concentration, the number of banks, or Herfindahl indices;
- b) To consider regulatory indicators to gauge the degree of contestability and it takes into account entry requirements, formal and informal barriers to entry for domestic and foreign banks, and activity restrictions Claessens (2009, p.7-9)

The rest of the paper is organized as follows. Section 2 concisely reviews the previous studies that applied the Panzar and Rosse methodology in the banking industry, including Bulgaria. Section 3 introduces data and methodology of the Panzar and Rosse model. Section 4 presents empirical results and equilibrium test, while Section 5 provides the conclusions.

## 1.2. The characteristics of the banking system in Bulgaria for the period 2013-2019

At the end of 2019, 25 banks were operating in Bulgaria, six of which were foreign bank branches. The number of banks is continuously decreasing due to the consolidation processes taking place in the sector. The total number of banks in Bulgaria has decreased by 16.6% for the period 2013-2019. In the European Union, only Croatia and Slovenia had a smaller number of banks in 2020 than Bulgaria - in 2020, only in Croatia and Slovenia there is a smaller number, respectively 24 and 17 respectively (<https://www.statista.com>).

*Table 1: Evolution of some bank variables over the period 2013-2019*

	2013	2014	2015	2016	2017	2018	2019	Change in %
Total banks	30	28	27	27	27	25	25	-16,6
including: branches of foreign banks	6	6	5	5	5	5	6	0
Total banks assets in billion (BGN)	85,7	85,1	87,5	92,1	97,8	105,6	114,2	33,2
GDP production method in billion (BGN)	81,96	83,9	89,4	95,1	102,3	109,7	119,7	46
Bank assets, percent of GDP	104,6	101,5	97,9	96,8	95,6	96,2	95,3	-8,9
The average ROA (from the sample)	0,54	0,66	1,02	1,33	1,07	1,33	1,22	125,9
The average ROE(from the sample)	4,77	5,08	6,38	9,05	7,12	10,32	9,37	96,4

*\* As of the end of the respective year*

*(Source: National statistical institute, Bulgarian National Bank and author calculation)*

In 2019 the total assets of the banks increased by 33, 2 % for the period 2013-2019. Bulgaria's Commercial Banks: return on assets ranges from 0,54 to 1,22. The data reached an all-period high of 1,33% in 2016, 2019 and a record low of 0,54 % in 2013. At the same time, the average return on equity in the Bulgarian banks ranges from 4, 77 to 10,32%. A significant increase is also observed in return on assets and return on equity, by 125,9 and 96,4 percent, respectively.

Krastev (2015) analyzed changes in the relative shares of banking assets to GDP of the Bulgarian bank market for the period 2011-2013 and concluded that for the period 2011-2013 the ratio of bank assets and gross domestic product grew steadily. From 2013 to 2019, however, the trend was completely opposite and this ratio decreased by nearly 9 percent. There have been several significant changes or mergers in the Bulgarian banking sector for the last six years (2013-2019) - the most important of which are:

- BNB Governing Council has revoked Corporate Commercial Bank AD's license for conducting banking activities on 6 November 2014, because the bank had violated the law by indirectly financing loan payments to itself. On 4 December 2014, the Deposit Guarantee Fund began paying out the guaranteed deposits (up to EUR 100,000) to the Corporate Commercial Bank depositors ([www.bnb.bg](http://www.bnb.bg)).
- On 5 February, the legal merger of Cibank JSC with United Bulgarian Bank AD (UBB) was completed. Cibank now ceases to exist as a separate legal entity, and its customer base has been automatically transferred to UBB. The merger of both banks is a process that is designed to make the new UBB the reference on the Bulgarian banking market (<https://newsroom.kbc.com>).
- OTP Bank officially announced the purchase of Societe Generale Express bank by its Bulgarian subsidiary DSK Bank and the beginning of the two banks' integration process on 15 January 2019. The two banks' integration process will result in creating one of the biggest and strongest banking institutions on the Bulgarian market (<https://dskbank.bg>).
- Postbank (Eurobank Bulgaria AD), which is part of the Eurobank International Group, successfully finalized the operational merger with Piraeus Bank Bulgaria AD (Piraeus Bank) on 17 November 2019. This is the final stage of the deal, which is key to the Eurobank Group, with major shareholders Canadian and US funds, and is part of its strategy to expand its focus on the markets in which it is a leader. On 12 November 2019, just 5 days earlier, the legal merger of the two banks was completed, and thus Piraeus bank was transformed through the means of absorption that leads to the dissolution of the company without the need for liquidation procedure (<https://www.postbank.bg>).

## **2. PANZAR AND ROSSE METHODOLOGY IN BANK SECTOR – A LITERATURE REVIEW**

In this context, the following subsection provides a review of the previous studies that applied the Panzar and Rosse methodology in the banking industry that include Bulgaria as part of the sample.

*Table following on the next page*



*Table 2: Review of the previous studies that applied the Panzar and Rosse approach*

N	Authors	Sample	Period	Model and type of dependent variable(DV)	control variables	Main findings
1	Andrieș, A. M., & Căpraru, B. (2014)	EU27 banking systems, including Bulgaria	2004-2010	scaled equation; DV-total revenue	liquidity risk as ratio of equity to total assets and size of the bank	Values of H-statistic for Bulgaria 2004–2010 was 0,27
2	Apergis, N., Fafaliou, I., & Polemis, M. L. (2016)	all EU member states (27 countries)	1996-2011	reduced-form revenue equations DV- gross interest revenues	Bank leverage, credit risk, and size	monopolistic competition is the best description of the extent of competition in the EU banking sector
3	Delis, M. D. (2010)	22 CEE including Bulgaria	1999-2006	reduced-form revenue equation DV-total revenue	share of majority state-owned banks' assets, the GDP per capita, and others	For Bulgaria, the H=0,06 and H=0 hypothesis is not rejected. Its banking system is characterized by monopolistic competition and is on the edge of presenting some anti-competitive conduct.
4	Huang, T.-H., & Liu, N.-H. (2013)	17 CEE countries, including Bulgaria	1994-2008	reduced-form regression equation DV-total revenue	operation risk, bank size, market concentration	For the first period, 1994-2001 Bulgarian H statistic was 0,90 for the second period 2002-2008 was 0,395
5	Kasman, A. (2010)	EU-27 and three candidate countries	1995-2007	reduced-form revenue equation DV-bank's total revenue	capital structure, risk. differences in the deposit mix and business mix	For the first period 1995-2001 Bulgarian H statistic was 0.25 and for the second period was close to zero 0,11
6	Lapteacru, I. (2014)	Ten Eastern European countries, including Bulgaria	1995-2011	reduced-form revenue equation; DV -total revenues		H-statistic ranges from 0,72 to-0,82 for Bulgariafor 2007-2011
7	Mamatzakakis, E., Staikouras, C., & Koutsomanoli-Fillipaki, N. (2005)	7 Eastern European countries, including Bulgaria	1998-2002	reduced-form revenue equation; DV-ratio of total operating revenue (calculated as interest revenue plus all other non-interest income) to total assets	differences in risks, bank's production function, and deposit mix	Monopolistic competition.
8	Marius Andrieș, Căpraru, B. (2012)	EU27 banking systems, including Bulgaria	2001-2009	scaled equation;	2	Marius Andrieș, Căpraru, B. (2012)
9	Mustafa, A., & Toçi, V. (2017)	16 European countries, including Bulgaria	1999-2009	reduced-form revenue equation DV-interest income	the loans to total assets ratio the equity to total assets ratio	the behaviour of banks operating in the CEE countries is consistent with monopoly behavior
10	Semih Yildirim, Philippatos, G. C. (2007)	13 European countries, including Bulgaria	1993-2000	DV -the ratio of total interest revenue (or total revenue) to total assets	Bank size- and deposit mix)	Monopolistic competition except for FYR of Macedonia and Slovakia. H-statistic ranges from 0,4 to-0,48 for Bulgaria
11	Trifonova, S. (2007)	Bulgaria	1995-2001	reduced form revenue equation DV-interest income	-	The H-statistic for the overall sample reaches a value of 0.44. The empirical results are generally consistent with monopolistic competition
12	Weill, L. (2013)	EU member states (27 countries)	2002-2008	reduced-form revenue equations DV-Total revenues	size and bank risk	H-statistic ranges from 0,3 to-0,5 for Bulgaria

*(Source:own author's study)*

The authors (Mamatzakis et al., 2005) tested a sample of banks from Albania, Bosnia, Bulgaria, Croatia, the Former Yugoslav Republic of Macedonia, Romania as well as Serbia for the period 1998-2002. They found evidence of monopolistic competition, with larger banks behaving more competitively than smaller ones. Weill (2013) conducted an analysis of competition in the EU banking sector for 2002-2008, including Bulgaria. According to him, in our country, H-statistic was in the range of 0.28-0.52. Again for the same period, in the inclusion of Bulgaria, Huang and Liu (2013) found that the average H-statistic was 0.395. Lapteacru (2014) examined Lerner index and its relationship with the Panzar and Rosse H-statistic using bank-level and country-level data from 1995 to 2011 for ten CEE countries, including Bulgaria. He stated that “after 2000, Bulgarian banks increase their competitiveness and simultaneously have higher levels of market power”. Unfortunately, most of them are quite outdated for the last ten years. We found only one recent study in this regard for Bulgaria, reported by Trifonova (2007). The other eleven are based on the banking systems in the EU, which include Bulgaria. The only study that gave some idea of H-statistic in Bulgaria's banking sector in the last 10 years is that of (Apergis et al., 2016). With one or two exceptions, previous studies confirmed that the Bulgarian banks' behavior was consistent with monopolistic competition. As we mentioned above, there is only one single-country study for Bulgaria Trifonova (2007), and for this reason, we will dwell on it in a little more detail. Trifonova (2007) used the Rosse-Panzar methodology to the micro data set of Bulgarian banks covering 1999–2005. In her empirical model, the role of the dependent variable was interest income. The functional form employed was a log-linear reduced form revenue equation. The H-statistic for the overall sample reached a value of 0.44. The empirical results were generally consistent with monopolistic competition as a characteristic of the analyzed banks' behavior in Bulgaria since the reported H-value is in the range of above zero and below 1 ( $0 < H < 1$ ). A critical factor price driving the Bulgarian banking system's H-statistic is the price for funds (interest expenses to total deposits) with a coefficient equal to 0,33.

### **3. DATA AND METHODOLOGY OF THE PANZAR AND ROSSE MODEL.**

#### **3.1. Database**

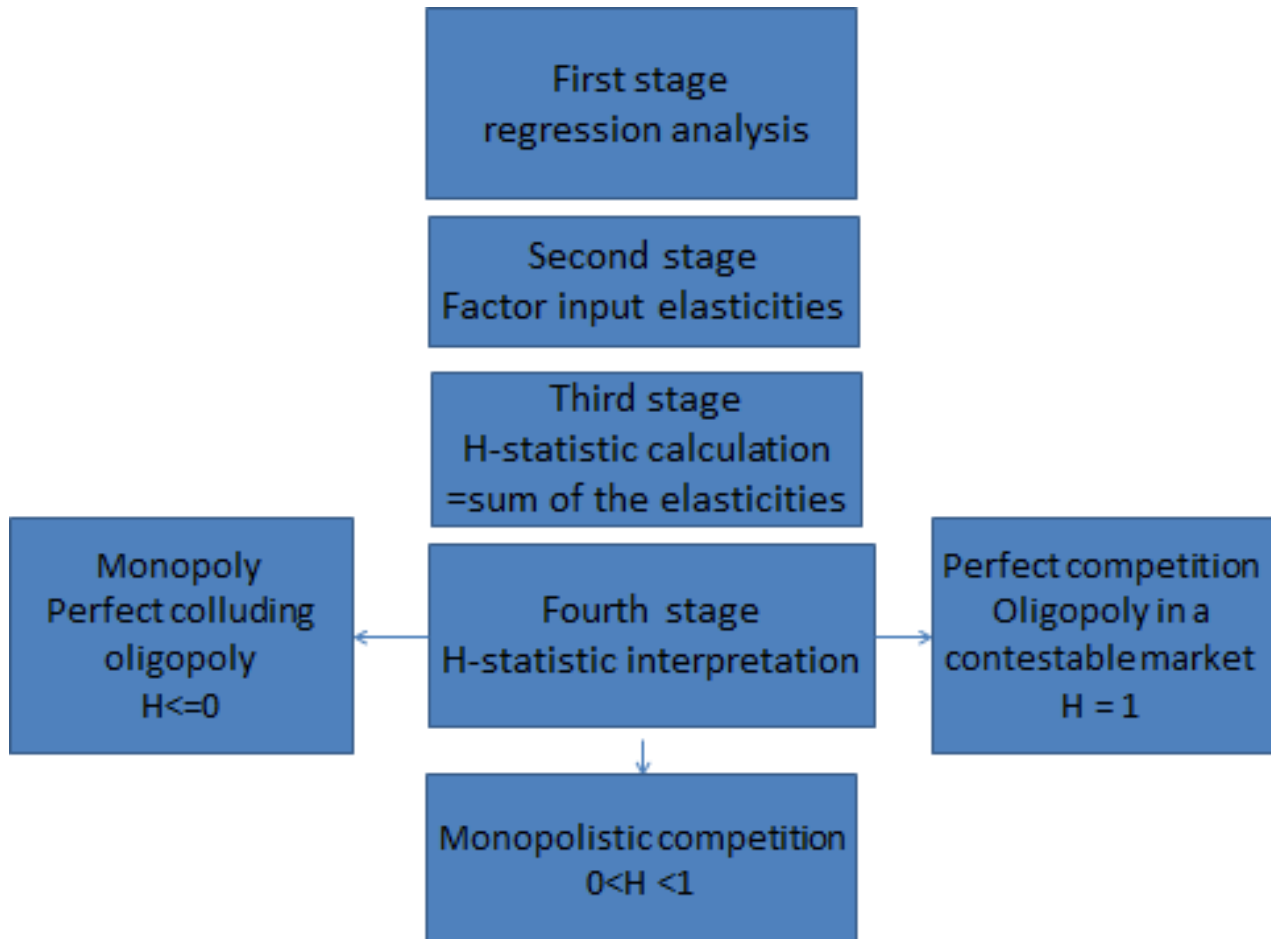
The data are obtained from the (Bankscope database of Bureau van Dijk) for the Bulgarian banks beginning in 2013 and ending in 2019. This database reports published financial statements from financial institutions worldwide. The data are annual observations of 18 commercial banks operating in Bulgaria. For a small number of banks, their annual financial reports published on the Bulgarian National Bank website (<https://www.bnb.bg>) were used for 2019. The total number of observations in the panel data is equal to 126 (18 banks over seven years). This paper uses the non-scaled reduced-form revenue function. In order to allow for non-linear effects and the log specification was applied on panel data. These data are reported in USD and are homogenized in order to be comparable and therefore suitable for a panel approach (Mamatzakis et al., 2005), Andries and Capraru (2014). The statistical data processing is performed with the Gretl software.

#### **3.2. The Panzar and Rosse methodology**

One of the most popular non-structural tests used to assess the banking industry competition is the Panzar and Rosse model. In the equation proposed by them, the function output and the function input resources (production factors) are expressed. The sum of the three main factors' elasticity: labor, finance, and capital calculated by this equation is the so-called "H-statistic". The Panzar and Rosse methodology requires the assumption that banks are treated as single product firms, producing intermediation services by using labor, physical capital, and financial capital as inputs (traditional intermediation approach). Under monopoly, the H-statistic should be smaller than or equal to zero.

In contrast, in the models of monopolistic competition and perfect competition, the H-statistic should be between 0 and 1. Finally, under perfect competition, the H-statistic is equal to 1. Overall, a larger H-statistic indicates a higher degree of competition. Nathan and Neave (1989) point out that this interpretation assumes the test is undertaken on observations that are in the long run equilibrium. We therefore also test whether the observations which we apply in our study are in long-run equilibrium.

Figure 1: Extraction and interpretation of the P–R statistic



(Source: Apergis et al., 2016)

All the individual steps of the analysis are shown in (Fig. no.1). To apply the Rosse-Panzar methodology (PR hereafter) to the described data set of Bulgarian banks and estimate the sum of the factor price elasticities (denoted below with the coefficients  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  with respect to banks' interest income. Much of the researches on the PR model used interest incomes as a dependent variable. They are based on the fact that interest incomes represent over 80% of total bank revenues in the surveyed samples. We will use the following equation the following estimation equation:

$$\ln(II)_{it} = C + \beta_1 \ln(PFit) + \beta_2 \ln(PLit) + \beta_3 \ln(PCit) + \beta_4 \ln(\text{bank risk})_{it} + \beta_5 \ln(\text{credit risk})_{it} + \beta_6 \ln(\text{bank size})_{it} + \varepsilon$$

The superscript i denotes bank i, and the superscript t denotes year t; and with “ln” we indicate natural logarithms. C is constant, and  $\varepsilon$  is the error term (idiosyncratic errors). The table presented below (Table no.3), shows the definition of the variables used in our model.

*Table 3: Description of the variables in the model*

<b>Variables</b>	<b>Notation</b>	<b>Description</b>
<b>dependent variable</b>		
bank total interest income	II	Interest and similar income on the loan portfolio and interbank deposits
<b>Independent</b>		
price of funds	loan_price	The total interest expenses to gross loans ratio; (in %)
price of labor	labor_price	measured by the ratio between staff expenses and total assets (in %); and
price of physical capital	capital_price	measured by the other operating expenses to total assets ratio (in%)
<b>Bank-specific features variables</b>		
bank risk	EquityAssets	the ratio of equity to total assets (in %)
credit risk		the ratio of customer loans to total assets (in%)
bank size	market_share	The ratio of bank's total assets to total bank assets in a country
<b>Bank performance</b>		
banks' return on assets	ROA	defined as net income over total assets

*(Source: author)*

A crucial difference among studies is the definition of the dependent variable applied in the estimation of H statistic. Most studies have used interest income as the dependent variable. Some studies have used total income as the dependent variable, considering that non-interest income was continuously increasing its share in the total income. Unlike most other studies in the CEE countries context, this paper follows (Bikker et al. 2012; 2007). The authors suggest not scaling the dependent variable to total assets. Mustafa and Toçi (2017) considered that the choice between the interest income and total income for the dependent variable is not highly relevant for estimating the banks' competitive behaviour. Given that the Bulgarian banking sector is focused mainly on interest income and it accounts for 75% of total bank income (author's calculations) the dependent variable in our main model specification is the interest income. Where variables in the model:

- II represents the bank interest income (dependent variable);
- Therefore, in line with most of the studies applying the P-R model to measure banking competition, input prices in our model consist of three categories:
- PF price of funds (variable loan\_price), which is measured by the total interest expenses to gross loans ratio; (in %)
- PL price of labor (variable labor\_price), which is measured by the ratio between staff expenses and total assets (in %); and
- PC -the price of physical capital (variable capital\_price), which is measured by the other operating expenses to total assets ratio (in %)

Bank-specific features variables:

- Some variables (total three) are included to control for bank-specific features that may affect bank incomes, and they are similar to those utilized in previous studies. They include the bank risk - the leverage reflecting differences in the risk preferences across banking institutions (Bikker et al., 2012), the bank credit risk Bikker and Spierdijk (2008) and the bank size.

Here, the bank size is used to test whether large banks enjoy scale economies and thus higher interest income. Its connection with the dependent variable is expected to be positive, as many previous studies show Bikker and Haaf (2002).

- PR defines a measure of competition, the H-statistic', which represents the percentage variation from the equilibrium revenue derived from an infinitesimal percent increase in the price of all factors used by the firm. The sum of elasticity often called the H-statistic, ranges from  $-\infty$  to  $+1$ . Florian Leon (2015) thought that "the greater the transmission of cost changes into revenue changes, the more competitive the market is".
- Estimating the *H-statistic* enables us to test for a Bulgarian financial market's competitive condition under which the sample banks are operating.

#### 4. EMPIRICAL ANALYSIS AND EQUILIBRIUM TEST

##### 4.1. Results of regression models

The H-Statistic has been assessed using the total interest income regression equation.

Below, we will present (see table 4) the results of the analysis of the three regression models: Pooled OLS, Fixed-and Random-effects.

Table 4: Estimation results

Model	dependent variable: interest income		
	Model 1 Pooled OLS	Model 2 Fixed-effects	Model 3 : Random-effects (GLS)
	Coefficient/p-value	coefficient/p-value	coefficient/p-value
[1] loan price	0,096/(0,013**)	0,096/(0,0005***)	0,092/(0,0012***)
[2] capital price	0,04/(0,95)	-0,028/(0,49)	-0,03/(0,458)
[3] labor price	0,59/(0,006***)	0,719/(0,0053)***	0,648/(<0,0001***)
H-statistics=[1]+[2]+[3]	0,688/(0,0006)	0,788/(0,0009)	0,707/(7,7585e-007)
Competition	monopolistic competition	monopolistic competition	monopolistic competition
H-statistic=0,	Robust F=17,3/(0,0007***) Rejected	Robust F=15,8/(0,001***) Rejected	Robust F=24,47/(6.53984e-007***) Rejected
H-statistic=1	Robust F=3,56/(0,076*) Rejected at 10% level	Robust F=1,14/0,301 Not rejected	Robust F=4,24/(0,04**) Rejected at 5% level
constant	1,69/(0,0002***)	0,40/(0,0003***)	2,08/(<0,0001***)
Bank risk	0,39/(0,0043***)	0,122/(0,284)	0,193/(0,165)
Credit risk	0,028/(0,533)	0,123/(0,0003***)	0,048/(0,28)
Bank size	1,146/(8,36e-014***)	0,159/(7,34e-08***)	1,19/(<0,0001***)
Adjusted R-squared	0,963		
LSDV R-squared		0,99	
Within R-squared		0,694	

Note: Standard errors in parentheses. \*\*\*  $p < 0, 01$ , \*\*  $p < 0, 05$ , \*  $p < 0, 1$

(Source: author calculations)

First, the Wald test rejects the hypothesis of monopolistic market structure ( $H=0$ ) at the 1% significance level in all three models. Second, it also rejects the hypothesis of perfectly competitive market structure ( $H=1$ ) at the 10% significance level in Pooled OLS, at the 5% significance level in the Random-effects model. Let's look at the possible requirements of the three models and choose the most appropriate one. The possible problems using the Pooled OLS model may arise from several directions: if the presence of multicollinearity or heteroscedasticity.

#### 4.1.1. Dealing with multicollinearity

We check for collinearity with the variance inflation factor (VIF), as shown in other studies Apergis (2015). Table 5 below represents the VIF, which are the diagonal elements of the correlation matrix's inverse. As all the values for VIFs are below 4, we conclude that there are no multicollinearity problems for our models.

*Table 5: Variance Inflation Factors*

Variable	VIF
loan price	1,33
capital price	1,35
labor price	3,51
Bank risk	1,24
Credit risk	2,52
Bank size	2,61

$VIF(j) = 1/(1 - R(j)^2)$ , where  $R(j)$  is the multiple correlation coefficient between variable  $j$  and the other independent variables  
(Source: author calculations)

#### 4.1.2. We are dealing with heteroscedasticity

Since our regression equation covers 7 years and a total of 18 banks, it is unlikely to expect that for each bank, the same variances of the error terms are present. Breusch-Pagan test statistic (LM = 127.261 with p-value = 1.62889e-029) and since the null is that heteroskedasticity is not present, we accept the alternative that it is present. This suggests that the data used for our analysis is suffering from heteroscedasticity, which implies that estimates OLS can be inefficient. For the above reason, the results of pooled OLS will be presented for informational purposes only. How to choose the more appropriate of the other two models fixed-or random effects? For this purpose, we use two tests: the Breusch-Pagan test and the Hausman test.

*Table 6: Breusch-Pagan test and the Hausman test for the choice of fixed effects or random effects*

Test	H <sub>0</sub>	p-value	Interpretation
Breusch-Pagan test	Variance of the unit-specific error = 0	1,62889e-029	Reject
Hausman test	GLS estimates are consistent	0,16	Not reject

(Source: author calculations)

In our data, a p-value less than 5% indicates that the Breusch-Pagan test rejects the hypothesis that the effects are not random (in other words, the effects are random). To select an appropriate version of the GLS model (i.e., between fixed or random effects) we have tested the validity of the panel model using the Hausman test. The Hausman test p-value (0,16) is greater than 5%. The random-effects do not appear to be correlated with the regressors, and random effects can be used (Zulfikar, 2019). This leads us to the conclusion that the best of the three applied models is the one with random effects. All three applied models support the hypothesis of monopolistic competition on the Bulgarian banking market. The model pooled OLS shows the lowest (0.688) and the least reliable value of H-statistic. The other two models: FEM and REM show high values, respectively 0.788 and 0.707, which corresponds to the state monopolistic competition. The H-statistic value is high but comparable to that shown by Apergis (2015). Higher values of the H-statistic are associated with more competitive banking systems (Abdul Majid et al., 2007). This is not the first case of such high levels of H-statistics, and the authors (Olszak et al., 2013) reached similar conclusions for the Polish banking market. The H-value of the FE model present, is not significantly different from unity (at the 10% level), which is relatively

close to perfect competition, but in the RE model, it is significantly different (at the 10% level). Finally, the H-statistic can be one if any increase in input prices (p) increases marginal and average costs in the same proportion without changing banks' equilibrium product. Under this situation, banks that are inefficient (cannot solve the problem of changes in input prices) will be forced out of the market (Solano et al., 2020). Because the pooled OLS model doesn't meet some of the assumptions, we'll only analyze the other two models' results. The random effect model results slightly different from that of the fixed effect model.

Concerning inputs variables:

- The most significant and statistically significant impact on interest income has two of the three factors examined: labor price and loan price. In both models 2 and 3, the labor price provides the maximum contribution (0,719 and 0,648) to explain interest income, and best describes the H-statistic. In the variable price of funds we find not very high but statistically significant coefficient at the conventional level (0,01), suggesting that higher price of funds increases banks interest incomes. The dependent variable interest income appears to be non statistically significant related to the price of capital (PC).

If we pay attention to the specific banking variables, we will find the following:

- The bank risk (the ratio of equity to total assets) has a positive sign but a statistically insignificant effect on interest income. Credit risk also has a positive impact but is statistically significant only in the fixed effect model. The bank size exerts a positive and statistically significant effect in both models, indicating that the bank size is positively related to interest income and exerts beneficial effects of diversification. This confirms that larger banks manage to earn more interest income compared to smaller banks.

Given the results presented in our analysis, the degree of banking competition in Bulgaria for 2013-2019 is classified as monopolistic competition. The value of the H-statistic for the banking market is between 0,707 and 0,788, depending on the two models we apply.

#### 4.2. Test for long-term equilibrium

As shown in (Shaffer, 1983), H-statistic can only be correctly defined for a banking system that is in long-term equilibrium. The essence of this idea is as follows: if banks are systematically in a state of competition, this competition should eventually eliminate imbalances in risk distribution between them. Therefore, the level of profit (ROA) of banks should not closely correlate with factor prices, reflecting the individual levels of banks' risks. The implementation of this idea consists of three stages:

- 1) Replacement of the dependent variable in equation (1) from  $\ln(II)$  to  $\ln ROA$
- 2) Evaluation of the newly obtained equation - the equation of asset profitability;
- 3) Calculate Shaffer's E-stat

The P-R approach's underlying assumptions are that it should be used where the observations are in long-run equilibrium. The resultant E E-statistics is supposed to be significantly equal to zero in equilibrium and significantly negative in the case of disequilibrium. The idea behind this test is that, in equilibrium, returns on bank assets should not be related to input prices (Pawlowska, 2012). The authors (Mamatzakis et al., 2005) employed the equilibrium test for the SEE countries' banking industries over the period 1998–2002. They found that banks in this region (including the Bulgarian banking market) are operating under long-run equilibrium. Delis (2010) came to the same conclusion by tested long-run equilibrium for 22 CEE countries' banking industries over the period 1999–2006 (including the Bulgarian market).

*Table 7: Equilibrium tests ROA*

	dependent variable: $\ln(\text{ROA}+1)$ FEM regression			dependent variable: $\ln(\text{ROA}+1)$ REM regression (GLS)		
	coefficient	std. error	probability	coefficient	std. error	probability
[1] loan price	-0,19	0,06	0.0075***	-0,502	0,09	2.01e-08***
[2] capital price	0,035	0,10	0.726	0,174	0,109	0,11
[3] labour price	0.167	0,196	0.404	0,408	0,697	0,558
E-statistics=[1]+[2]+[3]	0,012	0,238	0,958**	0,08	0,675	0,905*

*(Source: author calculations)*

Once H's value is obtained, the hypothesis tests are carried out to determine whether the value is consistent with the theory. The P-R model is only valid if the market is in long-run equilibrium. To test the P-R model's validity, we estimate an equation where the dependent variable is the return on assets (ROA), and the independent variables are the same as in the baseline model. In line with Claessens and Laeven (2004), the measure of ROA is expressed as  $\ln(1+\text{ROA})$  in order to adjust for potential negative values that might have occurred due to bank losses in any year. The test for the long-run equilibrium is undertaken using the Wald coefficient restriction test, which tests whether  $E$  is equal to zero. The estimation provided an  $E$  coefficient of 0,01 FEM regression and 0,08 in REM regression, which can be considered very close to zero at the significance level of 5% and 10%. Hence, it makes the P-R model applicable for our sample of data. Our finding that the Bulgarian banking sector achieved long-run equilibrium is congruent with the relevant literature in line with the foregoing analysis.

## 5. CONCLUSION

To assess the degree of competition in the Bulgarian banking industry, an empirical analysis based on the nonstructural method developed by Panzar and Rosse (1987) was conducted. We used annual panel data covering 18 banks over seven years (2013-2019). We applied three different models to evaluate the H-statistic of competition on the Bulgarian banking market. After a series of tests, we found that the most appropriate of the three applied models is the one with random effects. Because of the results presented in our analysis, the degree of banking competition in Bulgaria for 2013-2019 is classified as monopolistic competition. The value of the H-statistic for the banking market is between 0,69 and 0,788, depending on the models we apply. We make the conclusion that the best of the three applied models is the one with random effects. The most significant and statistically significant impact on interest income has two of the three factors examined: labor price and loan price. In both fixed and random models, the labor price provides the maximum contribution (0,719 and 0,648) to explain interest income, and best describes the H-statistic. The dependent variable interest income appears to be non statistically significant related to the price of capital (PC). The bank risk has a positive sign but a statistically insignificant effect on interest income. The credit risk also has a positive impact but is statistically significant only in the fixed effect model. The bank size exerts a positive and statistically significant effect, indicating that the bank size is positively related to interest income and exerts beneficial effects of diversification. The bank size coefficient is positive and statistically significant in both models. This result supports the view that banks with higher market power obtain higher interest income. Our finding that the Bulgarian banking sector achieved long-run equilibrium concurs with finding from the relevant literature in line with the foregoing analysis.



**LITERATURE:**

1. Abdul Majid, Muhamed Zulkhibri, and Fadzlan Sufian. 2007 "Market structure and competition in emerging market: evidence from Malaysian Islamic banking industry." p. 99-121. [https://mpa.ub.uni-muenchen.de/12126/1/MPRA\\_paper\\_12126.pdf](https://mpa.ub.uni-muenchen.de/12126/1/MPRA_paper_12126.pdf)
2. Andries, A. M., & Capraru, B. (2014). "The nexus between competition and efficiency: the European banking industries experience" *International Business Review*, 23(3), 566-579. <https://doi.org/10.1016/j.ibusrev.2013.09.004>
3. Apergis, N. (2015). "Competition in the banking sector: New evidence from a panel of emerging market economies and the financial crisis" *Emerging Markets Review*, 25, 154–162. <https://doi.org/10.1016/j.ememar.2015.08.001>
4. Apergis, N., Fafaliou, I., & Polemis, M. L. (2016). "New evidence on assessing the level of competition in the European Union banking sector: A panel data approach." *International Business Review*, 25(1), 395–407. <https://doi.org/10.1016/j.ibusrev.2015.07.003>
5. Apergis, N., & Polemis, M. L. (2016). "Competition and efficiency in the MENA banking region: a nonstructural DEA approach." *Applied Economics*, 48(54), 5276-5291. <https://doi.org/10.1080/00036846.2016.1176112>
6. Bankscope database of Bureau van Dijk -<https://www.bvdinfo.com/en-gb/>, [Accessed November 30, 2021.]
7. Bikker, J. A., & Haaf, K. (2002). "Competition, concentration and their relationship: An empirical analysis of the banking industry." *Journal of Banking & Finance*, 26(11), 2191–2214. [https://doi.org/10.1016/S0378-4266\(02\)00205-4](https://doi.org/10.1016/S0378-4266(02)00205-4)
8. Bikker, J. A., Shaffer, S., & Spierdijk, L. (2012). "Assessing Competition with the Panzar-Rosse Model: The Role of Scale, Costs, and Equilibrium." *Review of Economics and Statistics*, 94(4), 1025–1044. [https://doi.org/10.1162/rest\\_a\\_00210](https://doi.org/10.1162/rest_a_00210)
9. Bikker, J. A., Spierdijk, L., & Finnie, P. (2007). "The impact of market structure, contestability and institutional environment on banking competition." Discussion Paper Series/Tjalling C. Koopmans Research Institute, 7(29)-[https://www.dnb.nl/en/binaries/Working%20Paper%20156-2007\\_tcm47-166535.pdf](https://www.dnb.nl/en/binaries/Working%20Paper%20156-2007_tcm47-166535.pdf)
10. Bikker, J. A., & Spierdijk, L. (2008). "How banking competition changed over time." Discussion Paper Series/Tjalling C. Koopmans Research Institute, 8(04). Vol 167: 125 -137
11. Bulgarian National Bank -[https://www.bnb.bg/BankSupervision/BSCreditInstitution/BSCIFinansReports/BSCIFRForeignBanks/BS\\_Q\\_202012\\_BG](https://www.bnb.bg/BankSupervision/BSCreditInstitution/BSCIFinansReports/BSCIFRForeignBanks/BS_Q_202012_BG), Accessed November 30, 2021
12. Bulgarian National Bank -[https://www.bnb.bg/PressOffice/POPressReleases/POPRDate/PR\\_20141106\\_1\\_EN](https://www.bnb.bg/PressOffice/POPressReleases/POPRDate/PR_20141106_1_EN), [Accessed January 10, 2021]
13. Claessens, S. (2009). "Competition in the financial sector: Overview of competition policies" *The World Bank Research Observer*, 24(1), 83-118. <https://doi.org/10.1093/wbro/lkp004>
14. Claessens S., Laeven L. (2004) "What drives bank competition? Some international Evidence. *Journal of Money, Credit and Banking* 36, 3, June part 2, 563-583. <https://doi.org/10.1596/1813-9450-3113>
15. Colwell, R. J., and E. P. Davis. 1992 "Output and Productivity in Banking." *The Scandinavian Journal of Economics* 94 p.111-129, <https://doi.org/10.2307/3440252>
16. Delis, M. D. (2010). "Competitive conditions in the Central and Eastern European banking systems". *Omega*, 38(5), 268–274. <https://doi.org/10.1016/j.omega.2008.09.002>
17. DSK Bank - <https://dskbank.bg/integration/en/news/2019/09/16/otp-bank-officially-announced-that-its-bulgarian-subsiary-dsk-bank-purchased-sg-expressbank>, [Accessed January 10, 2021.]
18. Florian Leon. 2015 "Measuring competition in banking: A critical review of methods" <https://core.ac.uk/download/pdf/49278607.pdf>

19. Freixas, Xavier 1997. “*Microeconomics of Banking*” Cambridge, Mass.: MIT Press. 77-79
20. Huang, T.-H., & Liu, N.-H. (2013) . *Bank competition in transition countries: Are those markets really in equilibrium?* Empirical Economics, 47(4), 1283–1316. <https://doi.org/10.1007/s00181-013-0778-2>
21. Kasman, A. (2010). *Consolidation and Competition in the Banking Industries of the EU Member and Candidate Countries*. Emerging Markets Finance and Trade, 46(6), 121–139. doi:10.2753/ree1540-496x460608
22. KBC Group NV- <https://newsroom.kbc.com/bulgaria-legal-merger-of-ubb-and-cibank-completed>, [Accessed January 10, 2021]
23. Krastev, Biser “State and trends in the banking sector in Central and Eastern Europe” Proceedings of the IV-th International Scientific Conference Climate Change, Economic Development, Environment and People (CCEDEP) Regional Development of Central and Eastern European Countries, University of Agribusiness and Rural Development – Plovdiv, Bulgaria 7 – 9 October, 2015, Volume I, p.426-436
24. Lapteacru, I. (2014). *Do more competitive banks have less market power? The evidence from Central and Eastern Europe*. Journal of International Money and Finance, 46, 41–60. <https://doi.org/10.1016/j.jimonfin.2014.03.005>
25. Mamatzakis, E., Staikouras, C., & Koutsomanoli-Fillipaki, N. (2005). *Competition and concentration in the banking sector of the South Eastern European region*. Emerging Markets Review, 6(2), 192–209. <https://doi.org/10.1016/j.ememar.2005.03.003>
26. Marius Andrieș, A., & Căpraru, B. (2012). *Competition and efficiency in EU27 banking systems*. Baltic Journal of Economics, 12(1), 41–60. <https://doi.org/10.1080/1406099x.2012.10840510>
27. Mustafa, A., & Toçi, V. (2017) *Estimation of the banking sector competition in the CEE countries: The Panzar-Rosse approach*. Zbornik radova Ekonomskog fakulteta u Rijeci: časopis za ekonomsku teoriju i praksu, 35(2), 459-485. <https://doi.org/10.18045/zbefri.2017.2.459>
28. Nathan, A., & Neave, E. H. (1989). *Competition and Contestability in Canada’s Financial System: Empirical Results*. The Canadian Journal of Economics, 22(3), 576. doi:10.2307/135541
29. National statistical institute- <https://www.nsi.bg/en/content/5437/gross-domestic-product-gdp>, Accessed November 30, 2021
30. Olszak, Małgorzata and Świtała, Filip and Kowalska, Iwona, 2013 *Competition in Commercial Banks in Poland – Analysis of Panzar-Rosse H-Statistics*, Available at SSRN: <https://ssrn.com/abstract=2378761> or <http://dx.doi.org/10.2139/ssrn.2378761>
31. Panzar, J. C., & Rosse, J. N. (1987). *Testing for ‘monopoly’ equilibrium*. The Journal of Industrial Economics, 35(4), 443-456. <https://doi.org/10.2307/2098582>
32. Pawlowska, Malgorzata, 2012 *Competition, Concentration and Foreign Capital in the Polish Banking Sector (Prior and During the Financial Crisis)* National Bank of Poland Working Paper No. 130, Available at SSRN: <https://ssrn.com/abstract=2190857> or <http://dx.doi.org/10.2139/ssrn.2190857>
33. Postbank - <https://www.postbank.bg/en/Za-nas/News/2019/11/Operational-Merge-Finalized>, [Accessed January 10, 2021]
34. Republic of Bulgaria, National statistical institute <https://www.nsi.bg/> [Accessed January 8, 2021].
35. Semih Yildirim, H., & Philippatos, G. C. (2007). *Competition and contestability in Central and Eastern European banking markets*. Managerial Finance, 33(3), 195–209. <https://doi.org/10.1108/03074350710718275>
36. Shaffer, S. 1983 “*Non-structural measures of competition*”/ Economic Letters 12, 1983, p. 349-35 [https://doi.org/10.1016/0165-1765\(83\)90061-7](https://doi.org/10.1016/0165-1765(83)90061-7)

37. Solano, J., Camino-Mogro, S. and Armijos-Bravo, G. (2020), *"Intra-banking competition in Ecuador: new evidence using panel data approach"*, Journal of Economics, Finance and Administrative Science, Vol. 25 No. 50, pp. 295-319 DOI: 10.1108/JEFAS-05-2019-0081
38. Statistical portal for market data - <https://www.statista.com/statistics/940867/number-of-banks-in-europe-by-country/>, [Accessed January 18, 2021]
39. Trifonova, S. (2007) *Testing for Bank Competition in the Eve of EU Accession*. In Conference on the Modernization of the Economy and Social Development, Moscow (Vol. 1, pp. 1-10)- <http://www.hse.ru/data/133/768/1238/Trifonova.doc>.
40. Weill, L. (2013) *Bank competition in the EU: How has it evolved?*. Journal of International Financial Markets, Institutions and Money, 26(C), 100-112.  
<https://doi.org/10.1016/j.intfin.2013.05.005>
41. Zulfikar, R. (2019). *"Estimation Model and Selection Method of Panel Data Regression: An Overview of Common Effect, Fixed Effect, and Random Effect Model"*, <https://osf.io/9qe2b/download/?format=pdf>, [Accessed January 5, 2021]

**APPENDIX***List of banks in the sample*

<b>N</b>	<b>Bank</b>
1	ALLIANZ BANK BULGARIA AD
2	BULGARIAN DEVELOPMENT BANK AD
3	BULGARIAN-AMERICAN CREDIT BANK
4	CENTRAL COOPERATIVE BANK AD
5	D COMMERCE BANK AD
6	DSK BANK PLC
7	EUROBANK BULGARIA AD
8	FIRST INVESTMENT BANK AD
9	INTERNATIONAL ASSET BANK AD
10	INVESTBANK PLC
11	MUNICIPAL BANK PLC
12	PROCREDIT BANK (BULGARIA) EAD
13	RAIFFEISENBANK (BULGARIA) EAD
14	TBI BANK EAD
15	TEXIMBANK
16	TOKUDA BANK
17	UNICREDIT BULBANK AD
18	UNITED BULGARIAN BANK - UBB

# CAUSALITY BETWEEN GOVERNMENT EXPENDITURE AND ECONOMIC GROWTH IN BULGARIA, ROMANIA, SLOVENIA, CROATIA AND GREECE

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## ABSTRACT

*The present study focuses on examining the relationship between government expenditure and economic growth within five selected Balkan countries (Bulgaria, Romania, Slovenia, Croatia and Greece) for the period from the first quarter of 2000 to the third quarter of 2020. On the one hand, the presence of a long-term cointegration relationship is examined by the Johansen cointegration test, which leads to the conclusion that such a relationship exists in all analyzed countries. On the other hand, the study tests causality between expenditure and growth in the short-term using the Granger causality test. The results obtained show some heterogeneity between countries. However, the results for most of the analyzed countries confirm a unidirectional causality from economic growth to government expenditure. The study emphasizes the need to look for a different approach to public finance management that would contribute to a higher rate of economic growth in these Balkan countries.*

**Keywords:** *causality, cointegration, economic growth, government expenditure*

## 1. INTRODUCTION

In a large number of studies in the scientific literature, emphasis is placed on fiscal policy and possible mechanisms for pursuing economic growth. More specifically, attention is focused on the fiscal governance instruments (including taxes and government expenditure) and the application of various econometric techniques to test whether there is a relationship between fiscal instruments and growth. The subject of the present study is the relationship between government expenditure and economic growth, and in this regard, the main purpose is to determine whether there is such a relationship for selected countries in the Balkan region in the short and long-term. Theoretical and empirical concepts that focus on the study of relationship between government expenditure and economic growth are systematized in the first part. The second part includes the data and methodology used. The third part focuses on the results of the applied econometric tests, and the fourth part contains the conclusions of the study.

## 2. LITERATURE REVIEW

The scientific literature in the field of public finance often focuses whether there is a relationship between the management of government expenditure and the achievement of economic growth. The investigation and establishment of the existence of such a causality between macroeconomic variables is of interest in a significant number of scientific studies. Dependence is tested in both the short and long-term and the results obtained confirm or deny the thesis of the existing relationship between growth and expenditure. Srinivasan (2013) uses data for the period 1973-2012 and confirms the existence of a short and long-term relationship for the Indian economy.

Arpaia and Turrini (2008) investigate 15 EU member states and identify that there is long-term relationship between government expenditure and potential output by applying cointegration analysis. In addition, they use pooled mean group estimation and conclude that the adjustment of government expenditure in the Nordic and Anglo-Saxon countries to changes in the potential level of output is significantly faster than in the countries of South-Eastern Europe. The main arguments for such a thesis may be due to the inelasticity of government expenditure relative to the economic development of most countries in South-Eastern Europe and especially in the Balkans (Nenkova and Angelov, 2020). Another group of authors consisting of Bağdigen and Çetintaş (2004), Loizides and Vamvoukas (2005), Jiranyakul and Brahmasrene (2007), Liu, Hsu and Younis (2008), Bayrakdara, Demeza and Yapara (2015), Karhan (2018), Uzoma-Nwosu (2018), Pula and Elshani (2018), Uzoma-Nwosu (2018), Bandres and Cadea (2019) highlight the direction of causality. Their analyses aim to determine whether government expenditure create opportunities to boost economic growth, or rather the degree of economic development is decisive in public finance management decisions. Some studies conclude that government expenditure have an impact on economic growth, thus supporting the importance of the public sector in managing the economy. Jiranyakul and Brahmasrene (2007), Ramphul (2012) and Pula and Elshani (2018) confirm the unidirectional influence of expenditure on growth. Liu, Hsu and Younis (2008) use data for the period 1947-2002 and also find that total government expenditure impact the growth of the US economy, but these conclusions can not be confirmed when they study the influence of growth on expenditure. Moreover, they further examine groups of federal expenditure and their relationship to economic growth and conclude that no causality could be established for some of these groups (e.g. defense expenditure). For other groups of federal expenditure, only an unidirectional causality can be found (from expenditure to growth or from growth to expenditure), while for PR expenditure and net interest payment, there is a bidirectional causal relationship. Nikolova (2020) emphasizes that the level of interest payments in the structure of total government expenditures and also as a percentage of GDP plays a key role in the sustainability of public finance and the investment activity, and therefore can affect economic growth. Uzoma-Nwosu (2018) also establish a bidirectional causality between expenditure and growth for the period 1970-2016 in Nigeria. Loizides and Vamvoukas (2005) analyze the causality between economic growth and government expenditure in the United Kingdom, Greece and Ireland in the second half of the twentieth century. As a result, they conclude that in the UK and Greece economic growth is a significant factor that determines government policy and budget planning, as well as the existence of a bidirectional causal relationship between expenditure and growth. With regard to Ireland only a unidirectional causality is established (from expenditure to growth). Dritsakis and Adamopoulos (2004) also confirm a bidirectional causality between government expenditure and economic development in Greece for the period 1960-2001. Karhan (2018) investigates the relationship between expenditure and growth for Brazil, Russia, India, China, South Africa (BRICS) and Turkey, using data for the period 1989-2017 and notices that economic growth can be considered as a factor influencing government expenditure policy in the short-term, while the relationship between expenditure and growth is bidirectional in the long-term. Mehrara, Abrishami, Boroujli and Amin (2013) reaffirm the unidirectional causality and the impact of growth on the government expenditure of Iran in the period 1970-2010, emphasizing the need for more efficient resource allocation and more tangible private sector involvement. The long-term impact of economic growth on government expenditure is also verified by Bayrakdara, Demeza and Yapara (2015). Boussalem, Boussalem and Taiba (2014) reach a similar conclusion by examining the relationship between Algeria's economic growth, on the one hand, and government expenditure, but represented only by health care expenditure, on the other hand, for the period 1974-2014. In addition, there are studies in the scientific literature that deny the existence of a causal relationship between government expenditure and economic growth.

Bağdigen and Çetintaş (2004) come to these conclusions for the Turkish economy in the period 1965-2000. Dogan and Tang (2006) analyze data for 5 countries in Southeast Asia (Indonesia, Malaysia, the Philippines, Singapore and Thailand) and conclude that there is no causality between expenditure and growth in 4 of these countries. Only for the economy of the Philippines the influence of government expenditure on the economic development of the country is established.

### 3. DATA AND METHODOLOGY

In the present study, we examine the existence of a relationship between government expenditure and economic growth using a cointegration test and a short-term causality test. The study covers five Balkan countries that are members of the European Union (Bulgaria, Romania, Greece, Croatia and Slovenia). For this purpose, we use quarterly data for the period from the first quarter of 2000 to the third quarter of 2020 (2000Q1-2020Q3). The number of observations is 83. The source of the data is the macroeconomic statistics of Eurostat. Economic growth (RG) is presented by the available unadjusted data for Gross Domestic Product (GDP, chain linked volumes (2015) in million euro). Government expenditure (EXP) is included in the analysis as a ratio of GDP. Due to the fact that we use quarterly data in the study, it is possible that there are cyclical fluctuations in the time series, which will adversely affect the results obtained. That is why, the time series of the analyzed variables are seasonally adjusted, and then transformed into natural logarithms (LN RG, LN EXP). At the next stage, unit root tests are applied. In this regard, we use the Augmented Dickey–Fuller (ADF) test (which uses the information criteria of Schwarz and Akaike) and the Phillips-Perron (PP) test. The test for causality between government expenditure and economic growth is performed by the Granger test (1969). The following two equations are used for this purpose:

$$\text{LN RG}_{i,t} = \alpha_{0,i} + \sum_{j=1}^m \beta_{i,j} \text{LN RG}_{i,t-j} + \sum_{p=1}^d \gamma_{i,p} \text{LN EXP}_{i,t-p} + \varepsilon_{i,t} \quad (1)$$

$$\text{LN EXP}_{i,t} = \eta_{0,i} + \sum_{j=1}^m \mu_{i,j} \text{LN EXP}_{i,t-j} + \sum_{p=1}^d \delta_{i,p} \text{LN RG}_{i,t-p} + v_{i,t} \quad (2)$$

where  $i$  refers to the country (where  $i = 1, \dots, N$ );  $t$  refers to the time period (where  $t = 1, \dots, T$ );  $p$  and  $j$  refer respectively to the lags (where  $p = 1, \dots, d$  and  $j = 1, \dots, m$ );  $m$  and  $d$  refer respectively to the optimal lag for variables LN RG and LN EXP;  $\varepsilon$  and  $v$  are the residual components. When applying the Granger test, two hypotheses are defined. The null hypothesis ( $H_0$ ) states that there is no causal relationship, i.e. LN EXP is not a cause of LN RG ( $\gamma_1 = \gamma_2 = \dots = \gamma_d = 0$ ) or LN RG is not a cause of LN EXP ( $\delta_1 = \delta_2 = \dots = \delta_d = 0$ ). The alternative hypothesis ( $H_1$ ) assumes that government expenditure causes changes in the rate of economic growth (in Equation 1) respectively the rate of economic growth causes changes in the level of government expenditure (in Equation 2). If we accept the alternative hypothesis in only one of the two cases (equations), then there is a unidirectional causality. When the alternative hypothesis is valid for both equations above, then there is a bidirectional causality. Through the Granger test, a causal relationship between government expenditure and economic growth can be investigated and established in the short-term. In addition, we examine whether there is a relationship between the analyzed variables in the long-term. Therefore the Johansen cointegration test is performed (Johansen and Juselius, 1990). The basis of Johansen's test is to check the number of cointegrating relations, including whether such a relationship exists.

Two types of test statistics (trace statistics and maximum eigenvalue statistics) are used. The trace statistic tests the null hypothesis ( $H_0$ ) that the number of cointegrating equations is  $r$ , where  $r = 0, 1, 2 \dots v-1$ , against an alternative hypothesis ( $H_1$ ) for  $v$  number of cointegrating equations (where  $v$  is the number of endogenous variables).

$$\text{COINR}_{\text{trace}}(r | v) = -T \sum_{i=r+1}^v \ln(1 - \lambda_i) \quad (3)$$

where:  $T$  is sample size and  $\lambda$  is eigenvalues.

The maximum eigenvalue statistic tests the null hypothesis ( $H_0$ ) according to which the number of cointegrating equations is equal to  $r$  against an alternative hypothesis ( $H_1$ ) that states that the number is equal to  $r+1$ .

$$\text{COINR}_{\text{max}}(r | r + 1) = -T \ln(1 - \lambda_{r+1}) \quad (4)$$

#### 4. RESULTS AND DISCUSSION

##### 4.1. Results from applied unit root tests

In Table 1 are presented the results from unit root test of the analyzed variables for each of the country under the scope of the present study. Augmented Dickey–Fuller (ADF) test and Phillips–Perron (PP) test are applied.

Variables	ADF Test statistic				PP Test statistic	
	Schwarz Info Criterion	Akaike Info Criterion	Bartlett kernel			
	Prob.*	t-statistic	Prob.*	t-statistic	Prob.*	Adj. t-Stat
<b>Bulgaria</b>						
LNRG	0.108	-2.550	0.168	-2.321	0.114	-2.522
LNEXP	0.126	-2.474	0.591	-0.255	0.091	-2.630
<b>Croatia</b>						
LNRG	0.110	-2.538	0.110	-2.538	0.117	-2.508
LNEXP	0.442	-0.629	0.442	-0.629	0.258	-2.069
<b>Greece</b>						
LNRG	0.855	-0.638	0.855	-0.638	0.812	-0.804
LNEXP	0.569	-1.418	0.569	-1.418	0.418	-1.718
<b>Romania</b>						
LNRG	0.525	-1.508	0.525	-1.508	0.528	-1.502
LNEXP	0.434	-1.686	0.251	-2.086	0.434	-1.686
<b>Slovenia</b>						
LNRG	0.483	-1.591	0.483	-1.591	0.480	-1.595
LNEXP	0.369	-1.817	0.311	-1.945	0.233	-2.132

*Table 1: Unit Root Test Results (in level)*  
(Source: Authors' own calculations)

As a result of the performed unit root tests at levels, it is found that the obtained probabilities (Prob.\*) for the variables used are greater than the significance level of 5 %. Therefore, all the variables at levels  $I(0)$  are non-stationary, and this can lead to confusion about the real relationship between the analyzed variables. To avoid such a problem, time series are transformed using first difference  $I(1)$ .



Table 2 below presents the results of the applied unit root tests, showing that the time series of the analyzed variables at the first difference are stationary.

Variables	ADF Test statistic				PP Test statistic	
	Schwarz Info Criterion		Akaike Info Criterion		Bartlett kernel	
	Prob.*	t-statistic	Prob.*	t-statistic	Prob.*	Adj. t-Stat
<b>Bulgaria</b>						
DLNRG	0.000	-9.996	0.047	-1.969	0.000	-9.493
DLNEXP	0.000	-7.092	0.000	-7.092	0.000	-7.238
<b>Croatia</b>						
DLNRG	0.000	-8.939	0.000	-8.939	0.000	-9.033
DLNEXP	0.005	-3.736	0.005	-3.736	0.005	-3.749
<b>Greece</b>						
DLNRG	0.000	-8.545	0.000	-8.545	0.000	-8.736
DLNEXP	0.000	-5.322	0.000	-5.322	0.000	-6.430
<b>Romania</b>						
DLNRG	0.000	-8.354	0.000	-8.354	0.000	-8.352
DLNEXP	0.000	-7.495	0.000	-7.495	0.000	-7.469
<b>Slovenia</b>						
DLNRG	0.000	-8.017	0.000	-4.671	0.000	-8.121
DLNEXP	0.000	-8.208	0.000	-4.705	0.000	-8.265

*Table 2: Unit Root Test Results (in first difference)*

*(Source: Authors' own calculations)*

The results presented in Table 2 allow us in Equation (1) and Equation (2) to replace the variables LNRG and LNEXP with variables formed as their first difference, i.e. DLNRG and DLNEXP. In this way, the relationship between the growth rate of the economy of the selected Balkan countries, on the one hand, and the government expenditure (as a percentage of GDP), on the other hand, can be examined. After the transformation of the variables, the Granger causality test is used in order to establish the existence and direction of a causal relationship between government expenditure and economic growth in Bulgaria, Croatia, Greece, Slovenia and Romania.

#### 4.2. Granger causality test results

By applying the Granger test, a conclusion can be reached about the relationship in the short-term. Moreover, this test can establish not only the presence of a relationship, but also its direction, i.e. whether expenditure affect economic growth, or economic growth is a factor, predetermining government expenditure, or whether there is in fact a bidirectional causality. Before applying the Granger test, it is necessary to determine the optimal number of lags. For this purpose, we use Akaike (AIC), Hannan-Quinn (HQ) and Schwarz (SC) information criteria. The optimal number of lags is given in Table 3 for each of the countries. The applied Granger test leads to different conclusions with respect to the analyzed countries. It should be noted that Croatia is the only country in the scope of this study where we establish a bidirectional causality (at significance level of 10%), i.e. government expenditure affect the rate of economic growth, as well as the growth of the Croatian economy leads to changes in the government expenditure policy.

Variables	Lag	F-Statistic	Prob.	Causality
Bulgaria				
DLNEXP → DLNRG	4	0.27537	0.8929	No causality
DLNRG → DLNEXP		2.88868	0.0285	Unidirectional
Croatia				
DLNEXP → DLNRG	7	2.16915	0.0497	Bidirectional
DLNRG → DLNEXP		1.93587	0.0794	
Greece				
DLNEXP → DLNRG	2	0.33755	0.7146	No causality
DLNRG → DLNEXP		1.99817	0.1427	No causality
Romania				
DLNEXP → DLNRG	1	0.53585	0.4663	No causality
DLNRG → DLNEXP		3.85857	0.0531	Unidirectional
Slovenia				
DLNEXP → DLNRG	7	0.26076	0.9666	No causality
DLNRG → DLNEXP		2.94001	0.0103	Unidirectional

*Table 3: The Pairwise Granger Causality Tests Results*  
(Source: Authors' own calculations)

The obtained results from the Granger test show that for Bulgaria, Romania and Slovenia there is a unidirectional causal relationship for the period from the first quarter of 2000 to the third quarter of 2020. For all three countries economic growth has been found to cause changes in the activities of governments and their expenditure on public goods and investment. However, the result of the Granger test does not confirm the thesis that government expenditure in these Balkan countries causes changes in their economic development in the short-term. On the other hand, only in Greece of the countries surveyed, no causal relationship is found between expenditure and growth. The arguments for this result can be sought from the fact that the Greek government generated the highest average relative share of government expenditure relative to GDP for the period 2000Q1-2020Q3 (about 50%), but at the same time the average growth rate of the Greek economy for the same period is the lowest. The analyzes performed on the relationship between the activities of governments and the development of the economies of the five Balkan countries in the short-term raise many questions about the effectiveness of the management of their government expenditure. All countries that are the subject of this analysis are characterized by significant public sector involvement in economic governance. Therefore, it is important to find the better mechanism in the allocation of budgetary resources in a way that promotes greater economic growth.

#### 4.3. Johansen cointegration test results

In the long-term, testing for cointegration between the variables is performed using the Johansen cointegration test. The basis of the test is to establish the number of cointegration relations and to interpret two test statistics - Maximum Englevalue and Trace Statistics. According to the methodology presented in the second part of the study, the null ( $H_0$ ) and alternative ( $H_1$ ) hypotheses are defined and tested. The results are presented in Table 4 below. The optimal number of lags applied in the Granger causality test (in section 4.2) is also used in the Johansen cointegration test. The obtained results allow us to conclude that in all five countries under the scope of the study there is a long-term cointegration relationship between government expenditure and economic growth.

<b>Bulgaria</b>				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None*	0.142339	13.34652	12.32090	0.0336
At most 1	0.017410	1.369931	4.129906	0.2829
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None*	0.142339	11.97659	11.22480	0.0368
At most 1	0.017410	1.369931	4.129906	0.2829
<b>Croatia</b>				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None*	0.300884	38.45278	25.87211	0.0008
At most 1	0.143384	11.60741	12.51798	0.0706
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None*	0.300884	26.84538	19.38704	0.0034
At most 1	0.143384	11.60741	12.51798	0.0706
<b>Greece</b>				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None*	0.155604	13.89261	12.32090	0.0271
At most 1	0.004514	0.361910	4.129906	0.6104
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None*	0.155604	13.53070	11.22480	0.0193
At most 1	0.004514	0.361910	4.129906	0.6104
<b>Romania</b>				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None*	0.233156	27.61229	20.26184	0.0040
At most 1	0.072647	6.109077	9.164546	0.1825
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None*	0.233156	21.50321	15.89210	0.0059
At most 1	0.072647	6.109077	9.164546	0.1825
<b>Slovenia</b>				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None*	0.168938	16.39312	12.32090	0.0099
At most 1	0.032969	2.514340	4.129906	0.1333
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None*	0.168938	13.87878	11.22480	0.0167
At most 1	0.032969	2.514340	4.129906	0.1333

*Table 4: The Johansen Cointegration Test Results  
(Source: Authors' own calculations)*

Initial empirical tests using trace statistics and max-eigen statistics at a significance level of 5% (prob. < 0.05) lead to the rejection of the null hypothesis of no cointegration relationship and the acceptance of a hypothesis of such dependence ( $r > 0$ ). In subsequent tests (At most 1) there is no reason to reject the null hypothesis. Therefore, for each of the countries there is one cointegration equation proving the relationship between the variables used. The results of Granger and Johansen's tests show that while in the short-term government expenditure in almost all countries has no impact on economic development, this is not the case in the long-term. Obviously, the effects of the government activities in Bulgaria, Greece, Slovenia and Romania are delayed. In the present study, we focus only on whether there is a long-term relationship between expenditure and growth, but not on the outcome of this relationship, i.e. whether government have a positive or negative effect on growth, or vice versa. This can be verified by additional econometric valuation models known in research practice.

## 5. CONCLUSION

The analysis made in the present study allows us to conclude that for selected countries in the Balkan region (Bulgaria, Croatia, Greece, Romania and Slovenia) there is a relationship between government expenditure and economic growth in the long-term. More precisely, the direction of causality in the short-term has been investigated, noting some similarities and differences in terms of results obtained by country. The similarities are that for all countries except Greece, the direction of causality is from economic growth to government expenditure. These findings are not expected, due to the fact that within the period under review, the countries covered by the study pursue the stimulation of economic growth through the increase of government expenditure in priority sectors for governments. The differences in the results obtained in the short-term are due to the fact that Croatia is the only country in which there is a bidirectional relationship between expenditure and growth, and in Greece there is no evidence of causality between the studied indicators.

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## LITERATURE:

1. Arpaia, A., Turrini, A. (2008). *Government expenditure and economic growth in the EU: long-run tendencies and short-term adjustment* (European Economy, Economic papers 300). Brussels: European Commission. Retrieved 19.02.2021 from [https://ec.europa.eu/economy\\_finance/publications/pages/publication12024\\_en.pdf](https://ec.europa.eu/economy_finance/publications/pages/publication12024_en.pdf).
2. Bandres, E., Cadea, M.D. (2019). Investigating causal relations between public spending and economic growth in Europe. *Revista de Economía Mundial*, 51, 51-78.
3. Bağdigen, M., Çetintaş, H. (2004). Causality between Public Expenditure and Economic Growth: The Turkish Case. *Journal of Economic and Social Research*, 6(1), 53-72.
4. Bayrakdara, S., Demeza, S., Yapar, M. (2015). Testing the validity of Wagner's law: 1998-2004, The case of Turkey. *Procedia - Social and Behavioral Sciences*, 195, 493–500.
5. Boussalem, F., Boussalem, F., Taiba, A., 2014. The relationship between public spending on health and economic growth in Algeria: testing for co-integration and causality. *International journal of business and management*, II(3), 25-39.
6. Dogan, E., Tang, T.C. (2006). Government Expenditure And National Income: Causality Tests For Five South East Asian Countries, *International Business & Economics Research Journal*, 5(10), 49-58.

7. Dritsakis, N., Adamopoulos, A. (2004). A causal relationship between government spending and economic development: an empirical examination of the Greek economy. *Applied Economics*, 36(5), 457-464.
8. Jiranyakul, K., Brahmastreene, T. (2007). *The relationship between government expenditures and economic growth in Thailand* (Munich Personal RePEc Archive paper № 88426). Munich: University Library of Munich. Retrieved 19.02.2021 from [https://mpra.ub.uni-muenchen.de/88426/1/MPRA\\_paper\\_88426.pdf](https://mpra.ub.uni-muenchen.de/88426/1/MPRA_paper_88426.pdf).
9. Johansen, S., Juselius, K. (1990). Maximum likelihood estimation and inference on cointegration - with applications to the demand for money. *Oxford bulletin of economics and statistics*, 52(2), 169-210.
10. Karhan, G. (2018). The relationship between public expenditures and economic growth: a panel var approach. *Cumhuriyet Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 19(2), 35-43.
11. Liu, L.C., Hsu, C.E., Younis, M.Z. (2008). The association between government expenditure and economic growth: granger causality test of us data, 1947-2002. *Journal of Public Budgeting, Accounting & Financial Management*, 20(4), 439-452.
12. Loizides, J., Vamvoukas, G. (2005). Government expenditure and economic growth: evidence from trivariate causality testing. *Journal of Applied Economics*, 8(1), 125-152.
13. Mehrara, M., Abrishami, H., Boroujli, M., Amin, M. (2013). Government Expenditure and Economic Growth in Iran. *International Letters of Social and Humanistic Sciences*, 11, 76-83.
14. Nenkova, P., Angelov, A. (2020). Assessment of the Fiscal Stances of the Balkan States. *Economic Archive*, 73(4), 14-34.
15. Nikolova, V. (2020). Debt Sustainability of EU Member States: A Cluster Analysis. *Economic Archive*, 73(1), 48-64.
16. Pula, L., Elshani, A. (2018). The relationship between public expenditure and economic growth in Kosovo: Findings from a Johansen co-integrated test and a Granger causality test. *Ekonomika*, 97(1), 47-62.
17. Ramphul. (2012). Causality between government expenditure and economic growth in India: an empirical investigation. *Finance India*, 26(4), 1275-1290.
18. Srinivasan, P. (2013). Causality between Public Expenditure and Economic Growth: The Indian Case. *International Journal of Economics and Management*, 7(2), 335-347.
19. Uzoma-Nwosu, D.C. (2018). The causality between economic growth and government expenditure in Nigeria. *Review of Innovation and Competitiveness*, 4(4), 5-22.

# HUMAN RESOURCES MANAGEMENT UNDER THE INFLUENCE OF COVID 19 PANDEMIC

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## **ABSTRACT**

*Businesses operate in an environment that changes every day. Monitoring and early detection of changes in the external environment, which may have a negative impact on the company, is considered the first prerequisite for its protection and increased resilience. Although the company is unable to influence the crisis environment, it can mitigate, control and minimize the effects of crisis situations on the operation of the company through positive thinking and actions of top and crisis management. There are modifications in the field of legislation, quality standards, continuous improvement of technology, or social values; in addition, businesses are currently affected by the Covid 19 pandemic. The pandemic has had a significant impact on businesses; represents a significant intervention in the current management of human resources, there has been a major change in the transfer of number of work activities to the online sphere. During the pandemic, human resource management became an even more important part of any company, as many employees had to stay home, significantly reducing not only their contact with each other, but also the overall ability of the company's management to manage employees. Businesses thus strive to replace personal contact with various forms of people management that take place in the online sphere. A pandemic represents a new risk at work, which also affects the working conditions of employees. At present, HR professionals take care, among other things, of the health of employees or ensure sufficient communication between the employer and the employee regarding the company's current measures. The aim of the article is to analyse current changes in human resource management on the example of a critical infrastructure company in terms of personnel management functions.*

**Keywords:** Human resources, Management, Pandemic, Work

## **1. INTRODUCTION**

Human resources are the most important factor in any business, as they condition the use of other resources. We can understand human resources as employees, more specifically their knowledge and abilities, skills as well as their personal characteristics. Nowadays, when there are rapid and frequent changes in companies, but also outside them, it is necessary to employ people who have a positive attitude to the work performed, have professional knowledge, the necessary skills and interest in developing them. Human resource management is an integral part of an organization's management. Its main task is to enable management to improve individual and collective attitudes of people to short-term but also long-term success of the organization, create an environment that helps develop human potential and create positive employee motivation to meet organizational goals, strengthen interpersonal relationships in the organization, support teamwork and monitor development, affecting the fulfilment of the goals of employees and the organisation as a whole. The traditional management approach understood human resources as performers and focused mainly on processes. Unlike in the past, human resource management is now rather strategic in nature and is therefore perceived mainly in terms of people's contribution to business results. There was never any doubt about the importance of human resources in the organizational structure of companies. In some, however, HR managers themselves have relegated themselves to the role of statisticians or "executors" of owner or director orders. The importance of human resource management in the organization and how it will work is decided by the organization itself.

At the same time, it decides on its scope, structure and on the position of human resources management in the hierarchy of management activities of the organization. Currently, human resource management has a different role in organizations. It covers number of activities and activities from searching, recruiting, selecting employees to leaving an employee in the organization in which he works. It focuses on activities to improve working conditions in the organization, company culture, employee care, etc. In many cases, however, 2020 marked a major change in the way individual companies make decisions. Constant changes in the economic and social field of society must also be reflected in the need for changes in access to human resources. Today, human resource management faces many challenging issues and challenges. Personnel activities need to be analysed in terms of goals, activities, strategies and procedures necessary to meet the needs of both employers and employees. The article is focused on case study and analysis of HRM in selected company during the Covid 19 pandemic from aspect of chosen HRM activities.

## **2. HUMAN RESOURCES MANAGEMENT IN COMPANY**

Human resources management can be characterized as a strategic, planned, the Behaviourism in social responsible communication business strategy and targeted approach to managing the most important article in the organization, its employees. Human resource management seeks to reconcile the need for human resources with their potential. Its main task is therefore to use the potential of employees as effectively as possible so that the goals of the company are met. It is also necessary to ensure satisfaction and motivation for your employees, to give them space for development and not to forget their personal lives. In the 21st century, human resource management is gaining more and more prominence as it helps to increase the quality of employee benefits that are important to the company's success in both the short and long term. (Majtan, 2016)

### **2.1. The importance of human resources in the company**

Human resources are one of the resources used in the company, necessary for the fulfilment of its intentions. They form an important part of every company, because they are a necessary prerequisite for its existence and further development. Therefore, human resources should be treated at least as carefully as material, financial or information resources. Plainer describes in his work that hard resources can be used in companies, i.e. those related to company materials and money or human resources, which are carried by the employees themselves. Human resources represent the characteristics of people, their abilities or attitudes and are useful in the implementation of activities in the company. (Plamínek, 2018) Kachaňáková et al. states that human resources are currently a key factor in the functioning and development of any company, and their importance will increase in the future. If a company wants to move forward and ensure its competitiveness, it must employ competent people who, even in turbulent times, can perform the set tasks from a professional and professional point of view. Zainon (2020) identifies employees as an important part of the company, necessary to fulfil the mission and achieve goals in the company. He states that nowadays the achievement of business goals is significantly influenced by, for example, technological changes, market conditions, the economic situation, or the level of requirements imposed by the customer. Tomčíková (2020) has a similar opinion, stating that all changes that occur are determined by one common fact, and that is the existence of human capital in the company. Employees manage financial, material and information resources, control them, correct errors, plan their needs and coordinate them. The employee must be a strategic advantage and benefit for the company, which should be reflected not only in financial results but also in operating results (e.g. customer satisfaction or labour productivity), in which case it can be described as the most valuable resource. (Gemar, 2019) Procedure for the continuous improvement of human resource management, 2019)

Managing human resources means assigning tasks to them and controlling their fulfilment, providing them with information important for their work, motivating them, developing their knowledge and skills, but also solving their problems. All this should lead to the achievement of the company's goals. The success of human resource management lies in understanding employees, understanding differences in their behaviour, performance. According to Vrchota and Rehor (2019), human resource management is perceived as one of the most important parts of the company's strategy, mainly because its main task is to work with people who are the most important part of every company, as without them companies would not be able to meet their goals.

## **2.2. Changes of the HRM in era of globalization**

From the above we can conclude that human resource management has been considered an important prerequisite for successful business since its inception, but in recent literature, more and more emphasis is placed on people management, while the authors try to point to its gradual development and interconnection with other areas. According to most authors, the impulses for the development of human resource management are precisely technological advances, various legislative changes, market conditions, changes in social values and, last but not least, natural conditions. Today, the globalization economy has a significant impact on human resources and their management, enabling organizations to compete with each other internationally. The presence of globalization can lead to a competitive advantage if companies integrate local business peculiarities and effectively transfer knowledge and technology across borders. However, the transformation of best human resource management practices into other countries is not always possible due to cultural and institutional differences (Cehlárová, Cocul'ová, 2012). The rapidly changing world and the globalization of the business environment are putting enormous pressure on organizations to face the changes they face. For this reason, the ability of the company and its management to make the necessary changes is very important. Businesses operate in an environment that changes every day. There are modifications in the field of legislation, quality standards, continuous improvement of technology or social values. Such changes have the greatest impact on human resources, as they are in direct contact with them and must respond flexibly to them so that the company can successfully advance and develop. For this reason, investing in human resources and training is considered a safe way for employers to increase an organization's performance. (Blaga et al., 2020) The importance of Human Resources in the Continuous Improvement of the Production Quality, 2020) Human resources management should strive to achieve harmony between management procedures and corporate goals in the field of recruitment and selection of employees, remuneration system, or evaluation of the performance of its employees, so that these goals are met. It should also focus on employee behaviour and its impact on business performance. (Tashtoush, 2020) The relationship between human resource management practices and organizational citizenship behaviour, 2020) At present, more and more experts are beginning to look at human resources management from a different perspective. It is an effort to reconcile human resource management and sustainable development so that the company's economic goals are achieved, while avoiding social and environmental problems in the future. According to the author, this compliance will be achieved through careful human resource planning, motivation and control of the proper performance of business tasks with a view to achieving sustainable development. (Drela, 2020) Sustainable development in the field of human resources management also includes social sustainability, which includes not only employee management but also care for them. The consequence of the company's inability to meet social sustainability may be a disruption of corporate culture, the achievement of corporate goals, or the morale of employees. Likewise, current human resource management is increasingly seeking to expand the development of workers' professional skills to include the development of soft skills, thus



enabling employees to broaden their horizons in the field of interpersonal relationships and behaviour. By individual development of human resources, the company is able to ensure the overall organizational well-being. (Battaglio, 2020) The Future of Public Human Resource Management, 2020) The Covid 19 pandemic is currently one of the key factors for global change and it is therefore necessary to focus on its impact on HRM.

### **2.3. HRM changes during the pandemic Covid 19**

Covid-19 is a natural factor in the external environment that has affected businesses around the world. It is one of the infectious diseases and first appeared in the city of Wuchan, China, in December 2019. The virus mainly affects the respiratory system, and can lead to severe pneumonia or even death. It is transmitted through droplets, especially when talking, coughing or sneezing. COVID-19 pandemic has caused the most serious shocks in the global economy since the end of World War II. At the time the virus was discovered, economists and analysts had predicted only a partial impact on the world economy. However, the events that took place at the beginning of 2020 brought a significant change, when all the key economies of the world almost stopped. Selected service sectors have de facto disappeared and that many industrial and manufacturing companies have had to deal with serious supply chain disruptions. Slovak author, Bečka (2020), takes a similar view, arguing that the impact of the pandemic on the global economy has caused a drop in demand for products and services, as well as sudden complications in subcontracting. At the same time, the rapid advent of crisis management has led to a strict approach to protecting the health and safety of employees, as well as protecting business on a local and global scale. The sharp decline in economic activity comes with a catastrophic impact on the global labour market. According to the International Labour Organization (ILO), the global decline in working hours in 2020 compared to 2019 was equivalent to the loss of 300 million full-time jobs. The International Labour Organization estimates that up to 80% of the approximately 2 billion informally employed workers worldwide are affected by the pandemic. (International Monetary Fund, 2020) According to Pouliakas and Branka (2020) and Fana et al. (2020) the most vulnerable segments of the workforce most likely to be affected by distance measures and practices as a result of the COVID-19 pandemic are women, foreigners, people with non-standard contracts (self-employed and temporary workers), people with low education, micro-workers, workplaces and low-wage workers. During the pandemic, human resource management became an even more important part of any company, as many employees had to stay from home, significantly reducing not only their contact but also the overall ability of management to manage employees. Businesses thus strive to replace personal contact with various forms of people management that take place in the online sphere, such as virtual education and courses, evaluation meetings, counselling meetings and the like. They also try to maintain good working relationships and satisfaction on the part of employees, for example through short online game meetings, various virtual competitions, communication exercises, providing seminars focused on stress or anxiety, but also online exercises (e.g. meditation). All these activities strengthen the motivation of employees and help increase their involvement. In addition to these activities, human resources managers and managers must discuss with the company's management the current situation so that they can provide employees with all necessary information and thus contribute to their well-being, safety, or productivity. The human resources management pandemic has expanded the scope of work because beyond the original activities currently have to take care of the health and well-being of workers and also deal with redundancies much more often. Due to the current situation, there are a number of changes in companies, and human resources must be able to accept these changes first. At present, in addition to online communication of employees, electronic recruitment and selection of new employees is gaining prominence in human resource management, which enables companies to attract candidates

from various places, without the need to travel. (Rodríguez-Sánchez et al., 2019) Human resource management has mostly shifted to the online realm. Employees who were allowed to do so by the nature of the work remained to work from home. In many companies, personal contact has been replaced by e-mail communication or video conferencing. As a result, the importance of personnel staff increased significantly during the pandemic. At present, the main task of HR staff is to maintain the productivity and motivation of employees and to contribute to maintaining their well-being. (Lewis, 2020) Gigauri (2020) describes the pandemic as a factor that makes a positive contribution to human resource management, in particular by speeding up the digitization process in companies so that employees can carry out their work activities during this period as well. It also emphasizes that human resources are under greater pressure during the crisis, which is increasing the personal stress of workers. Singh, like Gigauri, states in his article that there have been significant changes in human resource management during the pandemic, especially digitalisation, as companies have had to create a day-to-day space for employees to work from home. Covid-19 also affected the activities of human resources staff, who had to start recruiting candidates, interviews or training employees through video calls. Businesses began to perceive the safety and health of their employees from a completely different perspective, and in connection with this, new obligations were added to employers regarding the disinfection of the workplace or the purchase of protective equipment. In difficult times, managers should encourage, support and motivate employees to stay true to their core values, demand feedback from employees, communicate with them openly and try to ensure their commitment to work despite the unfavourable situation. Only in this way can the company achieve good results. Prior to the pandemic, companies had no experience with such situations. Most employers tried to allow employees to work from home, which, however, e.g. in the services sector it was unrealistic.

### **3. RESEARCH RESULTS AND DISCUSSION**

In our research we used a method case study and we analysed the impact of the Covid 19 pandemic on human resources management in the selected division of the enterprise - Energetic distribution company in Slovakia. The company distributes electricity and provides households and businesses with services related to the operation of distribution networks, e.g. performs design of electrical equipment, installation of measuring and control technology and repairs related to it, engineering activities, rental of energy equipment, energy consulting and many other activities. The company with perceives human resources as a factor of progress, therefore it strives for the continuous development of its employees, increasing their qualifications, building and maintaining the trust of management and employees, supporting training and ensuring comfort at work. As an employer, he realizes that just satisfied employees can be a competitive advantage of the company. Our analysis we focused on one of the divisions, namely the Customer Services division. We chose customer services mainly because the employees within the division represent the company in a certain way, because they deal with customer requirements on a daily basis and come into contact with them, either by phone, e-mail, etc. The Customer Services division currently has 108 employees. As the name of the division implies, its main tasks are customer care, provision of services, solution of requirements, processes, processing of applications, changes of customers at collection points and many other activities. The company within its organizational structure, it has a Human Resources section, which, together with the managers of individual divisions, sections or departments, participates in the management of employees. Human resources are responsible for the performance of a number of activities, including e.g. publication of job offers, selection of candidates, their acceptance, provision of adaptation training for new employees, organization of training, remuneration, professional consultations, etc. The performance of personnel activities is mostly carried out by the company independently, through its employees.

The management of human resources in the company is implemented systematically with the aim of increasing education and development of employees, improving communication, information and overall growth of satisfaction of the company's employees. At present, human resources management in the company is like in other companies, largely affected by the Covid-19 pandemic. There have been several changes, more specifically, for example, in the area of the process of selecting employees, their adaptation, or training and development. The working conditions of workers have also changed to a large extent, mainly due to the fact that many employees have started working from home. Working from home also has a significant impact on workplace relationships, as employee contact has been minimized. As part of our research, we conducted a questionnaire survey, which is focused on finding out the opinions of employees, especially on how they perceive selected personnel functions and their working conditions during a pandemic. Questionnaire, which we compiled for employees working in offices. we handed to a total of 100 employees who work within the Customer Services division. This questionnaire contained a total of 28 questions focused mainly on the working conditions of employees performing work from home. 81 employees responded to the survey, which represents an 81% return. Despite the pandemic, up to 31% of respondents go to the office at least once a week and another 17% of workers at least twice a week. Most employees work permanently from home and therefore do not go to their work address at all. The issue of working time was very important; as many as 58% of respondents said that their working hours are longer, most often citing the unfavourable and turbulent work environment they have at home, the need to take care of other household members, slow internet, an increase in the number of jobs or worse conditions at work from home. The same number of employees stated that their work shift starts earlier, resp. starts later. In both cases, there were 6 employees each. According to them, the reason for the earlier start of the work shift is primarily the time saved when moving from home to work. On the contrary, at a later beginning, the slow connection in connection with the weak internet was mentioned again. Some employees stated that his work shift began later and was also longer. He stated as a reason that communication with other employees during the performance of work tasks had changed. The prevailing opinion among employees is that working from home does not affect their work performance (69% of respondents). A total of 13% of employees reported an increase in their work performance, most often citing the opportunity to work longer during the week and weekend work, which did not occur in the office, more independence while working from home, or less disruptive effects. On the contrary, 11% of employees stated that their work performance decreased. The main reason is the absence of the possibility to consult with colleagues directly at the workplace, the fact that applications go slower at home than at work, the impact of the environment, or unsuitable working conditions. When it comes to the issue of working conditions that employees have created at home; 25% of employees consider the working conditions of the home office to be insufficient, 36% to be average. As many as 86% of employees stated that their employer had provided them with the necessary means to work. Rising costs are also a problem with working from home. The staff mostly answered in the affirmative to the question regarding expenses due to work from home. As many as 28% of workers said their spending had certainly increased, with another 20% choosing the "rather yes" option. A questionnaire survey of interior workers showed us that the biggest shortcomings are a decrease in mental well-being, motivation and satisfaction, increased costs for employees when working from home, or the working conditions at home themselves. Many workers do not have suitable conditions at home, have slower internet, do not have their own space with the necessary equipment or have to engage in other activities in addition to work. On the other hand, they can save on travel costs as well as the time they need to move to the workplace. There have also been changes in the length of work for employees, with some working from home having a positive effect, and thus their work performance has increased, while others have decreased.

As already mentioned, the biggest reason in this case is the conditions at home, which each employee has very individually. Most employees feel the impact of the pandemic and working from home on their expenses, when the survey told us that they had increased. Expenditures on electricity, water, heating, the Internet and the telephone grew the most. On average, these costs increased by approximately € 20 per employee. On the positive side, despite working from home, communication between managers and employees is at a high level, and that workers receive sufficient feedback. The questionnaire survey also allowed us to find out that in most cases employees would no longer welcome work from home, due to one of the above. Prior to the pandemic, training as well as staff development were carried out on or off the company's premises, as appropriate. In addition to mandatory training, employees could also participate in other, above-mentioned training activities. At present, during a pandemic, any educational activities in the society that do not result from the valid legislation were cancelled for a long time. All mandatory training, the content of which allows it, must be carried out by videoconference. Compulsory courses, which are carried out in order to obtain a certificate of professional competence and it is necessary to implement them in person, must be taken under predetermined conditions, such as ensuring a minimum distance of 2 meters between individual employees. Based on the analysis and questionnaire survey, we were able to reveal shortcomings in management, the elimination of which can move the company's human resources management to a higher level. Every employer should be able to provide the employee with favourable working conditions as well as the means necessary to carry out his work. We propose the same contribution to cover the increased costs for each employee, as it would be too lengthy and difficult for the company to check each employee and his invoices for individual items separately. The allowance to cover costs would be provided to employees who work from home for at least 10 working days a month. Another important area for ensuring quality management of human resources in critical situations and maintaining the well-being and motivation of employees is to ensure extracurricular activities so that employees relax in their free time and at the same time do not feel the impact of the current situation on mental health. Obviously, critical situations and working from home can affect everyone differently. As we also found out through a questionnaire survey, the psychological side of some employees is not affected by the Covid-19 pandemic in connection with working from home at all, while others replied that their motivation, satisfaction and well-being are affected by working from home. In this area, therefore, we propose to the company to implement online activities through which employees come up with other ideas. For example, the implementation of various online exercises and activities, where employees will be in contact through the MS Teams application with the lecturer. Yoga exercises can be considered beneficial, as this activity has a positive effect on the elimination of stress and helps prevent depression. At the same time, it contributes to better posture and also relieves back pain, which is extremely important in sedentary work. Another proposal in the field of online activities is intended for managers of individual departments, who, in addition to managing employees, are expected to contribute to building and maintaining a friendly atmosphere in the workplace. The proposal thus consists in the introduction of regular informal online meetings. In the area of work, it is necessary to introduce more frequent feedback from managers. Quite naturally, the company cannot expect that the performance during work from home will be the same as those achieved under normal circumstances, when the employee works from the office, where he has created suitable working conditions for his work. Work performance fluctuates for employees, it can increase for one employee and decrease for another. Assessment during crisis situations becomes even more important, as communication between employees is very limited in these times and, as a result, there may be weaker feedback. Evaluation of the employee's performance, his support in solving unclear tasks and possible praise from the manager is a kind of motivation for each employee in the future.

We suggest that managers conduct evaluation interviews with their subordinates more often during critical situations, specifically once a month. As part of the systemic solution of critical situations in the interest of continuity, it is necessary to introduce security measures; these are standard steps that are taken into account when planning business continuity in companies to keep business processes functioning. The business continuity management program covers, in addition to infrastructure, cyber, business, operational, communication and employee risks. A timely analysis of risks related to threats to the physical and mental health of employees is also a systemic measure. In the context of employee risk management, an analysis of key roles requiring an on-site approach and addressing their absence (e.g. substitutability) is needed; proposal of measures to ensure the management of stress and stressful situations for employees; determining the method of locating and distributing employees at different stages of traffic suppression and also determining the approach to employee mobility (division of shifts, transport, etc.)

#### 4. CONCLUSION

The Covid 19 pandemic affected the management of human resources in all companies. Although some HRM functions have remained unchanged, more attention needs to be paid to communication, employee control, care for working conditions and the physical and mental health of employees. The situation regarding Covid-19 has encouraged employers to adapt quickly and make effective use of technology to move the workforce at a distance. Many work in the form of a home office for many months, some even for a year. Out of nowhere, the situation changed, and from everyday getting up to work and meeting colleagues, people stayed at home. With a computer in your kitchen or living room, at best in your office. Life changed and was replaced by isolation and cessation of normal activities. For many months, many employees are locked up at home. They are troubled by their stereotype, pandemic situation, unpleasant news, some have to combine their work responsibilities with caring for children. Health problems can also come to the fore. Whether it's various physical pains from prolonged improper sitting at a computer, overloaded eyesight by constantly looking at the monitor, or impaired mental health. The Covid-19 pandemic accelerated the home-office trend, but also revealed its limitations. The success of organizations will still depend on the personal interaction of people, their cooperation and team belonging. The most important thing is to adopt system solutions in such crisis situations to maintain continuity, including the timely identification of risks in the area of business operations as well as employee and communication risks within the framework of human resources management. Further research is needed to focus on model situations of human resources crisis management.

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#### LITERATURE:

1. Battaglio, P. 2020. The Future of Public Human Resource Management. In: *Public Personnel Management*. Dallas: SAGE Journals, 49 (4). pp. 499 – 502.
2. Bečka, M. 2020. Vplyv súčasnej globálnej pandémie SARS-CoV-2 na zamestnanosť v ekonomike Slovenskej republiky. In: *Economic Review*. 49 (2). pp.188-214. ISSN 0323-262X.
3. Blaga, P. et al. 2020. The Importance of Human Resources in the Continuous Improvement of the Production Quality. In: *Procedia Manufacturing*, 46, pp. 287-293. ISSN 2351-9789

4. Cehlárová, M.; Cocuľová, J. 2012. *Riadenie ľudských zdrojov v nadnárodných spoločnostiach*. Bratislava. Ekonóm. ISBN 978-80-225-3453-6.
5. Drela, K. 2020. Sustainable management of human resources in enterprises as an example of sustainable development. In: *Scientific Journals of the Maritime University of Szczecin*. 61(133) pp. 91-98. ISSN 1733-8670.
6. Fana, M. et al. 2020. Employment impact of Covid-19 crisis: from short term effects to long terms prospects. *J. Ind. Bus. Econ.* 47, pp.391–410.
7. Gemar, G. et al. 2019. Procedure for the continuous improvement of human resource management. In: *Ingeniería e Investigación Journal*. Colombia: Universidad Nacional de Colombia (Sede Bogotá), Facultad de Ingeniería, 39 (1), pp. 53 – 62. ISSN 2248-8723.
8. Gigauri, I. 2020. Influence of Covid-19 Crisis on Human Resource Management and Companies' Response: The Expert Study. In: *International Journal of Management Science and Business Administration*. 6 (6), pp. 15-24. ISSN 1849-5664.
9. Kachaňáková et al. 2013. *Riadenie ľudských zdrojov v organizáciách pôsobiach na Slovensku*. Bratislava: Wolters Kluwer (Iura Edition). 132 s. ISBN 978-80-8078-606-9.
10. Lewis, N. 2020. *HR Managers Rethink Their Role During the Coronavirus Pandemic*. [online] cit. 17. 2.2021. Available at: < <https://www.shrm.org/hr-today/news/hr-news/pages/hr-managers-rethink-their-work-coronavirus-pandemic.aspx>>
11. Plamínek, J. 2018. *Vedení lidí, týmů a firem*. 5. vydanie. Praha: Grada Publishing, a. s. 208 s. ISBN 978-80-271-0629-5.
12. Pouliakas, K., Branka, J. 2020. *EU jobs at highest risk of COVID-19 social distancing: is the pandemic exacerbating the labour market divide?* Cedefop—Working Paper Series. IZA DP No. 13281. [online] cit. 15. 3.2021. Available at: <http://ftp.iza.org/dp13281.pdf>
13. Rodríguez-Sánchez, JL et al. 2019. The Opportunity Presented by Technological Innovation to Attract Valuable Human Resources. In: *Sustainability* . 11 (20), ISSN 2071-1050.
14. Singh, M. 2020. *Impact of Covid-19 on HR practices and future workforce*. [online]. Cit. 16.3.2021. Available at: < <https://hr.economictimes.indiatimes.com/news/industry/impact-of-covid-19-on-hr-practices-and-future-workforce/75653859>>
15. Tashtoush, L. 2020. The Relationship between Human Resource Management Practices and Organisational Citizenship Behaviour. In *South African Journal of Business Management* 51(1) pp.1-11. ISSN 2078-5585.
16. Tomčíková, Ľ., Coculova, J. 2020. Leading and education of talented employees as one of the major impacts of globalization on human resources management. In: *SHS Web of Conferences* 8 (74). eISSN 2261-2424.
17. Vrchota, J., Řehoř, P. 2019. The influence of a human resource strategy to the function of human resource processes in small and medium-sized enterprises (SMEs). In: *Serbian Journal of Management* .14 (2), pp. 299 – 314.
18. Zainon, S. et al. 2020. Factors of Human Resource Management Practices Affecting Organizational Performance. In: *International Journal of Organizational Leadership* [online]. Malaysia: CIKD Publishing, 9 (4), pp. 184 – 197. ISSN 2345-6744.

## THE DETERMINANTS OF COMPULSIVE BUYING: A BALKANS CASE

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### ABSTRACT

*The level of education of consumers and, in particular, the attention that is being paid to consumer culture, have increased the expectations and demands for contemporary evidence, such as the use of credit cards, or financial advice. Furthermore, consumer willingness for embracing E-banking platforms is increasing. Using a causal approach, with this research, it has become possible to investigate the behavior towards the use of credit cards and the impact on what is called the "compulsive buying" of the Albanian consumer. This approach also takes into account demographic variables. This study begins with a discussion of the existing literature, from which several factors that were considered valuable to be studied on the Albanian consumer framework were taken into account. Hypotheses were then formulated and developed, followed by a description of the method used and finally a discussion on the analysis of the results. The study uses primary data as well as secondary data. The primary data was collected from a structured questionnaire, which was handed to various individuals, from students to professionals in various fields, including employees of several banks in Tirana, who were very willing to answer the questionnaire. Secondary data was collected from various published sources, namely economic journals, various scientific publications, and economic books. The findings of this research suggest that credit card cost of usage, buying behavior, and attitudes towards the use of credit cards, positively and significantly affect individual's compulsive buying behavior.*

**Keywords:** *Credit Card, Compulsive Buying, Electronic Money, Financial Literacy, Online Banking, Balkans*

### 1. INTRODUCTION

Individuals are increasingly using consumption as an alternative way to express and establish their identity, or social status (Soper, 2007; Faber, 2004). Thus, in a logical chain starting with money, as a tool that stimulates any economic mechanism, the relationship that this extremely important tool has with the use of credit card and hasty purchases will be studied. Changing the approach to money, from using it cash to embracing electronic payments, will be specifically

the study area. What we are most interested in is the highlights of this report, the hasty credit card-purchase, focusing on the factors that cause the latter. We live in an age from which we receive and give a lot, so we interact, mostly with the economy, science, technology and with the latter we often create relationships of dependence. Everyone tends to have the most expensive telephone equipment, the most fashionable clothes and the social impact, it is undoubtedly a very strong impetus. Some individuals tend to spend and be coherent in having the latest purchases because the social impact is stimulating. Others tend to save in their bank accounts and save them for difficult days, thus creating a social status. The status in this case is related to the bank account and the respective amounts. However, hasty buyers (impulsive buyers) perceive this fact differently. Yurchisin and Johnson (2004) examined the relationship between hasty acquisition and social status, related to materialism and self-esteem. According to them, hurried buyers were inclined to buy more, because in this way they felt better, "fought" the stressful situations that occurred in their lives and thus, had more power in their hands. They felt safer when collecting purchase invoices at the end of the day and this made them feel more confident. The same logic was followed by a large number of scholars on the role of the credit card in hasty purchases. The study spectrum becomes larger. In this case we will have to analyze how the credit card manages to affect and does it really affect the hasty purchases. Most of the people agree. As the domestic economy is more developed than it was a few years ago, and attitudes towards e-money have changed, the use of credit cards and their impact on purchases will increase respondents' credibility. In other words, as a result of the increase in the income of Albanian consumers, thus translated with monthly salaries, different impulses, diets or bonuses, lifestyle changes and the development of technology and marketing, makes the study of this report more reasonable for the Albanian consumer. It should be said that, among Albanian consumers, at least in the last five years, the concept of credit card has become more popular. And yet, again a good part of the population, are still skeptical about using this banking instrument. Tangible money is seen as a safer way, mostly by older age groups. Thus, the expansion of the credit card market can help to better understand whether credit card ownership influences the consumer's tendency to view money as a concept related to power and status, to spend and to develop hence the concept of compulsive buying.

## **2. LITERATURE REVIEW**

Hasty purchases or otherwise impulsive purchases, are considered those purchases which were not planned in advance, ie a "break" of the normal buying model. Accelerated acquisition has been described as "chronic and recurrent acquisition", performed as a primary response to events or negative feelings that accompany individuals at a particular point in life O'Cuinn and Faber (1989). Thus, many researchers link the hasty buying process with self-esteem, the desire to feel better, and a response to stress, frustration, and self-esteem. These individuals tend to buy as much as possible, so as not to be in contact with the surrounding environment and to develop their social position in society. From a scientific perspective, hasty buying is often overlooked and is classified as an impulsive control disorder Mueller (2007). However, its relationship with consumption is seen to be delicate and with negative consequences on personal finances, behaviors and reactions after purchasing the product and consumer self-esteem. Often these individuals support this overcoming attempt to feel better, but they cause major problems in their finances, where from these hasty actions, the need often arises to seek financial advice. However, financial advice is not a very familiar term for the Albanian consumer. Professional financial advice is mostly owned by large companies with liquidity problems or individuals who control many businesses at once. Meanwhile, for a larger population group, financial counselling takes the form of individual counselling regarding personal finances with a family, friend, co-worker or even dealing with income at their own expense.



However, the concept of hasty or impulsive and often unstoppable purchases should not come as a surprise as long as over the last century, individuals in society have increasingly supported debt or credit. If once, the term credit meant timely debt and somewhat unaffordable interest rates, today with the development of competition and the high number of commercial banks in the country, individuals have the opportunity to choose the bank that suits them best, at the rates they want, at the right time and with the amount they want. Lea (1993) in his study emphasizes the growth of the "debt culture", further expanding the analysis and placing emphasis on consumer education in this regard. Therefore, as long as individuals are familiar with this system, the logical connection between credit card and hasty purchases becomes possible. What is worth noting is the fact that generally all authors use the same variables. This, in turn, makes the analysis easier, but perhaps limits it to only a few dimensions. In order to avoid this, for the case of this study, these variables were adjusted, since based on the socio-economic situation of our country, some variables did not find a place in this test. From the review of selected literature, we see that James A. Roberts and Eli Jones (2001), had as main goal of their studies, the investigation of the role and use of credit card in hasty purchase. But, most of the attention, they paid to the dimensions of money that they thought were essential in helping to understand how hasty buying is caused. For the latter, Yamauchi and Templer (1982) worked hard and in the same line in an earlier study in time and were approved by Gresham and Fontenot 1989, Medina (1996). The highest evidence was from James A. Roberts and Eli Jones (2001), who found 5 factors / variables, which were discussed a lot. For them, money value, financial well-being, depression, anxiety, and low self-esteem were the main variables that encouraged individuals to spend, become impulsive shoppers, and use credit cards more than usual. Yamauchi and Templer's (1982), meanwhile, dealt mostly with four dimensions they considered extremely important, such as: prestige-power, time a consumer needs to buy, distrust, and anxiety (same variable). According to them, people who showed high tendencies to create power and prestige through money (as a control variable in our case), use money as a means to influence and impress others and as a symbol of success. For them, money means power (according to the study) and is a symbol of success, with which consumers show social presence by displaying their material wealth, because wealth is the best indicator of power in modern society Dittmar (2005). In the last decade, studies have been more inclined to look at money in materialistic terms, perhaps influenced by preliminary analyzes by authors over the years. Thus, in a detailed paper, Phau & Woo (2008) consider money or rather, consumers' attitude towards money, power and self-confidence as a powerful indicator of their hasty buying behavior. Aiming to research and examine the relationship to the attitude towards rushed purchases, in a paper analyzed for a business magazine, Arpita Khare (2013) paid great attention to the age and gender of Indian consumers highlighting many results. According to her, hasty buying behavior is a negative form of expressing feelings through excessive purchases, which lead to disruption of buying behavior and a destruction of everyone's portfolio. According to her, demographic factors, including age, gender, income and marital status, influence the attitudes of individuals towards hasty purchases, deterring the latter from making excessive purchases. Also according to her, hasty buyers are likely to link the buying process with power, success and status. They perceive their purchases as a way to overcome negative self-esteem and anxiety. So there is a strong connection between the desire for power and hasty purchases. The study also used suggestions regarding consumer education about credit card. It was noted that credit card companies used terms such as 'power' and 'price sensitivity' to target consumers. On the other hand, many authors considered it as the main factor, from which many variables would be essential indicators in the relationship "credit card-hasty purchase". Seen by many authors as a powerful tool and a powerful gauge of consumer status, specifically below will be listed some authors who have the same opinions but also those authors who think differently.

Where and how the paths of those who think of this essential factor in the analysis are divided, and how they suggest their theory. It should be noted that, specifically this analysis focuses on foreign authors, as it was very difficult to find data from works by Albanian authors on this issue. It was Valence et al (1988) who concluded in the fact that, hasty buyers are characterized by low self-esteem and negative emotional states. Also, the motivation to buy frequently is driven by the need to overcome negative emotional states and low self-esteem. Also, other scholars drew the same conclusions, added that there is an important relationship between high anxiety and sensitivity. Elliot (1994) also explained in his study that hasty buying behavior is a chronic repetitive buying behavior caused by anxiety and low self-esteem, the same logic as the authors before. Meanwhile, according to Arpita Khare (2016) age, income, education and marital status affect hasty purchasing, thus bringing new research variables. However, regarding the use of credit cards and the connection with hasty purchases, some authors are of the same opinion. It was Arpita Khare (2016) who made a connection between the use of credit cards and hasty purchases, saying that consumers' attitude towards credit cards has not affected hasty purchases. But Phau & Woo (2008) disagreed with this conclusion, concluding from their studies that credit card affects hasty purchases and according to them, individuals who have credit cards are more prone to buy more many and often exceed the limit of their cards. This, according to them, happens because individuals feel more secure when they have credit cards and are not worried about money if they want to buy more. Thus, they place these two factors in a direct connection between them. In their conclusions, they said rushed buyers are also the most frequent users of credit cards and are more likely to have a better job and consequently spend more. In several youth studies, Cliff A. Robb (2011) examined the relationship between financial literacy and the credit card behavior of college students. According to him, students with higher scores in a measure of personal financial knowledge, are more likely to engage in more responsible use of the credit card. In the same line of study was Bailey Harper (2015), where according to him a special implication in hasty purchases and credit card connection, had financial knowledge. According to him, financial knowledge was inevitably linked to financial stability. An individual in general, according to him, could not have a financial stability if he did not possess financial knowledge and financial culture. The results of his analysis showed that those who had better financial knowledge were more likely to have lower use of credit cards and consequently of hasty purchases. Meanwhile, Jeff Wan and Jing J. Xiao (2009) who examined the factors associated with college student credit card debt concluded that students with a propensity for hasty purchases are more likely and those with more support large social workers are less likely to bear credit card debts. Meanwhile, unlike any author discussed earlier, they displayed a new trend of influence by saying that college student social networks affect their credit card debt. However, they all came to the same conclusion that personal financial knowledge influences the behavior of college student credit card users. While Bailey Harper (2015), had a very interesting look at the accumulated credit card debt. He said: "Using credit cards when buying is necessarily a recipe for high levels of debt", implying that the credit card is a financial instrument that has a direct relationship with debt and certainly this was not a good. Thus, in his study he put forward the idea of financial responsibility. The latter approved as highly factual through the preliminary results of Moore & Carpenter (2009). For the latter, financial responsibilities and financial knowledge was a key variable to consider the credit card as an instrument of financial value and to evaluate it for the positive effects it brings.

### 3. METHODOLOGY

We are interested in the Albanian consumer access to the variables made available from foreign literatures, which were carefully adjusted in the following analysis. The use of credit cards and hasty purchases as a response to financial reflection will be the variables that have accompanied this study.

In this way, it is logical for these variables to be investigated through the questionnaire. The selection framework consists of various statements that can measure the performance of the variables. The assertions chosen are based on the factors considered, with the focus being on the credit card. Of course, the choice is also determined by the importance that each statement has on each target consumer. The data collected will assist in further analysis. As long as some research goals are formulated based on some concepts and the concepts are expressed in corresponding variables, it is more than logical to collect data for the analysis of the phenomenon and for the recognition of the behavior of the variables. Due to the nature of the research of the topic, for the specifics it carries, it is difficult to find ready-made data, especially regarding the case of Albania. Ready-made data are known as secondary data, as they are processed and published by third parties, which may be institutions or other legal entities. Primary data are data that are collected from the study conducted. It is understandable that this data is not ready, therefore, the manner of data collection, analysis and reporting is the direct responsibility of the study. Primary data were collected through a structured questionnaire, addressed to different individuals, able to respond objectively to this questionnaire. Most of the questions of interest that are part of the questionnaire are bipolar scaling questions, otherwise known as liqueur scaling. These types of questions are formulated in such a way that their answer fluctuates between the two ends and each position is associated with a number of ascending order, being "Completely Disagree" with the number 1, "Disagree" with the number 2, "Neither disagree nor agree" with the number 3, "Agree" with the number 4, and "Fully agree" with the number 5. Considering it reasonable, in this research bipolar scaling (liqueur scaling) was used, which is with five scales, where the lowest scale with number 1 is known as "Not at all", while the highest degree with number 5 is known as "Completely". It should be noted that, each of the factors considered important for this paper, are a combination of several statements that find place in explaining the variables within the questionnaire. They are calculated as the average of the answers given for each statement. The grouping of factors comes as a result of the interest to present the dimensions of the data. This happens in the case of exploratory analyzes. The grouping of known variables as factors also helps the hypotheses raised. The method to be used in this research is multifactorial linear regression. Regression analysis serves to study the relationships of ratios or relationships between two or more variables. In the case of simple regression, it can be linear and nonlinear regression. The regression equation is an equation that defines the ratios between two variables and is used to estimate the dependent variable (y) based on the independent variable (x). The dependent variable is the projected or estimated variable. The independent variable is the variable that provides the basis for the estimate. Regression analysis is used to predict the value of the dependent variable based on at least one independent variable; explain the effects of changing the independent variable to the dependent variable. The dependent variable is the variable we want to predict or explain, in our case it is hasty purchases. The independent variable is the variable used to explain the dependent variable, which in this case are the cost of use, care of expenses, attitude towards the use of the credit card.

#### 4. RESULTS

Using parametric testing, namely the t-test, we know that independent variables, in order to give a statistically significant effect, should present a value greater than 1.96, which is the critical value. Hypotheses about the importance of each variable must first be made, which are presented as follows:

Ho:  $\beta_i = 0$  (non-statistically significant variable).

Ha:  $\beta_i \neq 0$  (statistically significant variable).

This preliminary testing allowed to infer that if the variable "Cost of use" would increase by one, then the variable "compulsive buying" would increase by 0.244 units. The obtained value of  $t = 2.808$  is greater than 1.96, meaning that the basic hypothesis cannot be accepted and the variable is statistically significant. Similarly, if the variable "Buying behavior" would increase by one, then the variable "compulsive buying" would increase by 0.285 units, being the t-test value 3.624 and, therefore meaning the variable is statistically significant as well. Likewise, whether the variable "Attitude towards using a credit card" would increase by one, then the variable "Accelerated purchases" would also increase, but by 0.327 units. The value of  $t = 3.956$  is greater than the critical value of 1.96, allowing the same interpretation as above.

Table 1, shown below, offers the fundamental the regression results of the model.

Variable	B	SE	Beta	<i>t</i>	<i>p</i>
Constant	0.450	0.399	-	1.128	0.260
Gender	-0.066	0.131	-0.031	-0.504	0.615
Age	-0.020	0.008	-0.215	-2.624	0.009
Monthly income	0.385	0.079	0.294	4.852	0.000
Being single	0.275	0.157	0.129	1.749	0.082
Credit card usage	0.244	0.087	0.166	2.808	0.000
Buying behaviour	0.285	0.079	0.239	3.624	0.000
Attitude towards credit card usage	0.327	0.083	0.247	3.956	0.000

*Table 1: Regression results*

Therefore it is suggested with this research that individuals are more inclined to buy more when using credit card. This may lead to an increase in their debts to the bank due to the increase in hasty purchases, which respondents admit are less skeptical about product prices and buy more when they have at least one credit card, however this does not prevent them from being hasty buyers. Thus, we can say that according to all the data collected from the survey and analysis conducted, we conclude that the hasty purchase among our respondents operates to a considerable extent. Thus, in conclusion we can say the results are in consistent with theory. The results of this research work are in proportion to the hypotheses raised at the beginning of the study.

## 5. CONCLUSION

One curious finding regarding the variable "Civil Status", is that the questionnaire shows that most individuals, who comprise the largest percentage of respondents, belong to the status "single". Based on communication and consultation with foreign literature, which suggests that individuals who have not yet established a responsibility for the family or their family shelter, singles are more likely to be hasty buyers and also based on the results of the analysis ours, we will take this assumption for granted. This assumption also takes place in this analysis. While individuals who have created a family, try to be more prudent about purchases and not spend too much on moment purchases influenced by different factors. During the Regression analysis, a consistency of this theory with our results was observed. So civil status has a huge impact on the attitude towards rushed purchases and actually makes sense. From the Regression analysis, it was concluded that individuals are more prone to make hasty purchases when buying by credit card, much more than when buying with Cash. This may be due to the fact that the credit card gives them the advantage of buying even when there is not enough money in the account and repaying this debt in a second. It also gives them the opportunity to buy faster, safely and often with the advantage of various bonuses offered by the respective bank. Respondents admitted that they are less worried about the price when buying with a credit card and this

makes it possible to increase hasty purchases, but this only happens if the credit card is the operating factor. Otherwise, if they used Cash, they would buy fewer products and services. Admittedly, such a result is particularly satisfactory given the fact that in our country, a good portion of individuals, consider Cash money as a better and safer way to carry out all the activities of their economic. What can be recommended in relation to this topic, is related to the awareness of individuals about bank cards in general and credit card in particular. Reinforcing the consumer culture about the benefits of online banking would help in a more constructive analysis. Also, various instruction manuals about the pros and cons, as well as the use, so that individuals do not risk the other benefits that a credit card actually possesses. Also, an awareness measure should be achieved for individuals regarding hasty purchases. Today, the Albanian consumer is not very familiar with this term, much less to have information on what "symptoms" you should have to be called a hasty buyer. Thus, an awareness campaign should be recommended where individuals are given more information that is extremely worrying around the world. This is because, this phenomenon affects not only the personal income and portfolio of everyone, but the personal finances in the long run.

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## LITERATURE:

1. Dittmar, H. (2005). Compulsive buying: a growing concern? An examination of gender, age and endorsement of materialistic values as predictors. *British Journal of Psychology*, 96(4), 467–491.
2. Faber, R., O'Guinn, T. (1989). Classifying compulsive consumers: Advances in the development of a diagnostic tool. *Association of Consumer Research*, 16, 738-744.
3. Faber, R.J., & O'Guinn, T. (1992). A clinical screener for compulsive buying. *Journal of Consumer Research*, 19, 459–469.
4. Gresham, A., & Fontenot, G. (1989). The differing attitudes of the sexes toward money: an application of the money attitudes scale. *Southwestern Marketing Association*, 380-4.
5. Harper, B. (2015). Credit Card Debt and Compulsive Buying. *College Student Journal*, 2-14.
6. Khare, A. (2013). Credit card use and compulsive buying behavior. *Journal of Global Marketing*, (26), 28-40.
7. Khare, A. (2016). Money attitudes, credit card and compulsive buying behaviour: A study on Indian consumers. *Int. J. Business Competition and Growth*, (5), 49-71.
8. Lea, S. (1993). The economic psychology of consumer debt. *Journal of Economic Psychology*, 14, 85-119.
9. Medina, J.F., Saegert, J. & Gresham, A. (1996). Comparison of mexican-american and anglo-american attitudes toward money. *The Journal of Consumer Affairs*, 30(1), 124–146.
10. Mueller A., & Albert P. (2007). Hoarding in a compulsive buying sample. *Behaviour research and therapy*, 45(11), 54-63.
11. Phau, I., & Woo, Ch. (2008). Understanding compulsive buying tendencies among young Australians. *Marketing Intelligence & Planning*, 26(5), 441 – 458.
12. Roberts, J., & Jones, E. (2001). Money attitudes, credit card use, and compulsive buying among american college students. *The Journal of Consumer Affairs*, 35(21), 213-237.
13. Soper, K. (2007). Re-thinking the 'Good Life': The citizenship dimension of consumer disaffection with consumerism. *Journal of Consumer Culture*, 7(2), 205-229.
14. Valence, G., d'Astous, A. & Fortier, L. (1988). Compulsive buying: concept and measurement. *Journal of Consumer Policy*, 4(11), 419–433.

15. Wang, J., Xiao, J. (2009). Buying behavior, social support and credit card indebtedness of college students. *International Journal of Consumer Studies*, 33, 2-10.
16. Yamauchi, K.T., & Templer, D.L. (1982). The development of a money attitude scale. *Journal of Personality Assessment*, 46(5), 522–528.
17. Yurchisin, J. and Johnson, K.K.P. (2004). Compulsive buying behavior and its relationship to perceived social status associated with buying, materialism, self-esteem, and apparel-product involvement. *Family and Consumer Sciences Research Journal*, 32(3), 291–314.

