The impact of modern communication marketing tools to increase the innovativeness of business


This Version is available at: http://hdl.handle.net/11159/6867
development of business activities of most small and medium-sized enterprises, not only in Slovakia but throughout the world. In March 2020, the International Monetary Fund stated that the global economy had entered a recession. Thus, the outcome could be worse than the effects of the global financial crisis in 2009 (Georgieva, 2020). Although the International Monetary Fund expects a recovery or a significant rise, this unprecedented crisis has harmed most companies, including innovative ones (Cortez and Johnston, 2020; Kang et al., 2020). Following this situation, company managers worldwide began to intensively implement various contingency plans to overcome this pandemic crisis (Ritter and Pedersen, 2020). Unfortunately, it is not possible to rule out further waves of pandemics. Thus, it is necessary to consider various future restrictions (Ferencakova et al., 2020). Although the challenging conditions and threats for SMEs, this time could be an opportunity. Joseph Schumpeter has emphasized the importance of «creative destruction, which is painful but encourages innovation and progress by replacing the old and the familiar with new and better ones» (Schumpeter, 1934). Regardless of the current complicated situation, it is indisputable that many companies spend millions of dollars each year to promote a positive perception of their brand and the entire business as innovative (Shams et al., 2020). Many of these companies consider the image of «innovation» to be commercially beneficial. Therefore, they actively seek to portray their brands and the entire business effort as innovative through various marketing communication tools (Mura, 2020). The current situation related to COVID-19 has forced companies to respond to new customer behavior (Sevcik et al., 2020). This situation has also highlighted the need for greater use of modern online communication tools. The possibilities of communication with customers are constantly being explored. However, the research focused on individual tools and their use by companies during this difficult period. The goal of the study was to determine whether these tools have an impact on their business innovation. The research uniqueness was not only in the mentioned facts but also in the important environment specificity defined by the environment of the Slovak Republic and the consumer. This type of consumer, which in some respects until the time before COVID-19, was rigid to some online marketing tools. As the main research question, the determination of the degree of influence of modern communication tools for innovative companies.

**Literature Reviews.** It is only possible to agree with the premise that innovations could take various forms, whether the essential product or organization, process or marketing, and regardless of the specific form of innovation. It could be considered as the engine of competitiveness or the main driving force of business (Masouras, 2019). Most innovation literature focuses on product innovation's tangible results reflected in indicators such as sales, market share, or financial value (Henard and Dacin, 2010; Zhang et al., 2016). However, the issue also received attention from a marketing perspective (Brexendorf and Keller, 2017; Hubert et al., 2017; Pappu and Quester, 2016). Particularly, this issue becomes an important direction of business development strategic planning (Kostiukevych et al., 2020), with rapidly rising significance in times of pandemic crisis (Smeureanu and Diab, 2020). The perception that the company is innovative is increasingly important for customers (Verhoef et al., 2021). In the current turbulent environment, characterized by a high degree of openness, businesses are forced to innovate to a much greater extent than in the past to ensure competitiveness and the company's very existence (Ritter and Pedersen, 2020).

The importance of digitization and innovation in digitization processes increased significantly even before the current pandemic (Schallmo et al., 2020; Butschan et al., 2019). The effectiveness of these processes has been raised sharply due to the artificial intelligence use for different business purposes, primarily predicting future innovation success, ensuring the strategy's feasibility with the managerial decisions, etc. (Bencsik, 2021). However, mainly due to the current situation, everything has accelerated even more. Indeed, digitalization could achieve economic growth and increase the competitiveness of goods and services (Goker and Ayar, 2020). Given the large scale and pace of current digital transformations, the speed of response to their major trends is a significant competitive advantage.
The underlying rapid digitization and development of the information society point to the need to digitize marketing activities since consumers prefer those brands and companies that could quickly manage digital channels (Janoskova and Kliestikova, 2018). The experience of many foreign and domestic companies suggests a significant impact of digitization on sales activities (Chebli et al., 2020). Digital methods of information processing and use are a major source of efficiency and effectiveness of these activities (Rourke, 2018). The challenges of modern globalization contribute to the rapid implementation of the latest innovative capabilities of the digital world (Kljucnikov et al., 2016; Mura and Kajzar, 2019).

Due to the ongoing digitization, the area of marketing communication develops very quickly. (Verhoef et al., 2021). Creating new opportunities to increase profits is essential for amortizing large investments in digitization (Frohmann, 2018). In this context, modern digital marketing communication has become an ever-growing part of marketing companies (Vinerean et al., 2014; Schubach and Schumann, 2020). Besides, the importance of using multi-channel marketing activities is emphasized for maintaining competitiveness (Esteban-Bravo et al., 2015; Li et al., 2016) and digital agility in marketing communication (Verhoef et al., 2021). From the point of view of traditional marketing and its possibilities of using communication tools, the view is rooted. Above all, access is provided by using traditional advertising tools such as advertising. However, today’s consumers demand more, not least because of the current pandemic situation. But due to it, this need has intensified significantly. Thanks to digital tools, which are becoming more and more popular in marketing communication, consumers could experience increased comfort levels and indisputable speed that brings knowledge. It is important to encourage consumers to realize the value of communicated goods much faster. (Colton, 2018; Hollebeek et al., 2017).

The focus is on the benefits of modern (online) marketing. Its benefits are primarily in the possibility of an individual approach and quick response. These benefits are very important for consumers because they value their time more, which means they need and often require immediate feedback and an individual approach (Dzupina and Dzupinova, 2019; Shpak et al., 2020). The development of marketing communication tools means new practical opportunities and creates a great challenge for classical marketing theory. Sometimes the answer to these challenges is suggestions for abandoning some traditional standards. Sometimes it is proposals to modify them and adapt to current conditions. Online marketing communication tools could replace traditional tools (Danaher and Rossiter, 2011; Krizanova et al., 2019; Chovanova, 2019). However, as research and the companies’ practice show, the key is to combine these two approaches. They should coexist with different roles across the customer's path in purchasing decisions and most notably (Kottler et al., 2017). That is mainly because the buying process on the part of buyers has changed and rests on various communication and sales channels, between which customers are constantly switching. It challenges firms to adequately manage and integrate them (Kottler et al., 2020).

Methodology and research methods. The study, which forms the basis of the research of this paper and the project, consists of a quantitative and qualitative survey of 825 selected small, medium, and large enterprises in the Slovak Republic with a focus on a questionnaire survey. The issues of micro, small and medium-sized enterprises were addressed. The data obtained from the survey were processed using advanced statistical methods. The questionnaire consisted of ten questions related to business identification: four questions addressed the respondents and their relationship with the interviewed company; five groups of questions related to business perception innovation concerning management, implementation of production projects; questions focused on today's business perception of start-ups, links, and perspectives to the marketing of the company as a whole, the use of individual tools of marketing management in the company, tools focused on marketing communication, not only in terms of traditional tools of the communication mix but also tools of contemporary, more necessary online communication.

The questionnaire was distributed through an online form in Google Forms. Individual managers or owners confirmed the basic information about the studied company. It means that the survey was not
In terms of enterprise size, most of the enterprises involved were micro-enterprises (50%). Medium-sized enterprises accounted for 9%, small enterprises for 37%, and large enterprises for 4%. The questionnaire survey aimed to provide a sample from the entire territory of Slovakia. Thus, another identifying feature was the region according to the territorial administrative division of Slovakia. As the largest concentration of companies is in the Bratislava region, this was reflected in the obtained sample (57%), followed by companies from the Žilina region (9%) and the Banská Bystrica region (9%). Research examining the effects on increasing the company’s innovation was purposefully distributed to small and medium-sized enterprises in Slovakia. The survey was conducted electronically on 1000 companies selected based on their business innovativeness indicators. The survey lasted from September to December 2020. More than 82% of companies (the exact number of companies is 825) answer research questions, which helped the research work with a high representative sample. The data were analyzed using SPSS 23.0. From the point of view of perceived innovation, 76% of the sample examined is perceived as an innovative business, and only 24% do not consider their business to be innovative. This research involved 47.5% of micro-enterprises (up to 9 employees); 36.9% of small enterprises (up to 49 employees); 10.4% of medium-sized enterprises (50-249 employees); 5.2% of large enterprises (over 250 employees).

In this study, logistic regression analysis (LR) was used to determine whether there is a significant relationship between increasing the company’s innovation and marketing communication tools, both traditional and modern (associated with digital technologies). Logistic regression analysis was applied to check the relationship between a binary dependent variable, coded as 0 or 1 for two possible categories and a set of independent variables. LR is used to describe data and explain the relationship between a dependent binary variable and one or more nominal, ordinal, interval, or relative independent variables (Tabachnick and Fidell, 2012). The function of logistic regression is:

$$P(Y = 1) = \frac{1}{1+e^{-(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k)}}$$

where $P$ – the probability that event $Y$ would occur; $Y$ – a binary dependent variable ($Y = 1$ if, $Y = 0$ otherwise); $b$ – logistic regression coefficients; $X$ – independent variables.

In the study, if companies perceive their business as innovative, $Y$ equals 1 ($Y=1$). Conversely, if companies do not perceive their business as innovative, $Y$ equals 0 ($Y=0$). The use of individual marketing tools was measured using a 5-point Likert scale. The respondents expressed their verifications of using individual tools, whether they are traditional or modern tools. For completeness, the international dimension of the business factor was also presented. The answers ranged from 1 (international dimension) and 0 (national dimension). Individual parametric data could be defined as follows:

- $Y$: perceptioninnov (is a dependent variable) – perception of business as innovative;
- $X_1$: traditmarcom – use of traditional marketing communication tools;
- $X_2$: modmarcom – use of modern marketing communication tools;
- $X_3$: international – international operations of the company.

Cronbach’s alpha was used to check the reliability of each factor. That is a measure used to assess the reliability of a set of scales or test items. In general, Cronbach’s alpha should exceed 0.70 (Hair, 2011). Cronbach’s alpha coefficients were obtained for this investigated set of 0.678. Table 1 demonstrates the basic descriptive statistics of this survey.

Logistic regression analysis aims to determine the influence of individual determinants on increasing the number of innovative companies. Based on the results of previous research on this issue, the following hypotheses have been established:
The growth of traditional tools for marketing communication increases the number of innovative companies. (H0: Change in using traditional marketing communication tools does not affect the growth of many innovative companies).

The growth of the use of modern marketing communication tools increases the number of innovative companies. (H0: Change in using modern marketing communication tools does not affect the growth of many innovative companies).

Changing business from the national to the international level leads to an increase in innovative companies. (H0: Change of business from national to international does not affect the growth of many innovative companies).

Table 1. Descriptive Statistics

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Numbers</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>perceptinnov</td>
<td>825</td>
<td>0.00</td>
<td>1.00</td>
<td>0.4667</td>
<td>0.49920</td>
</tr>
<tr>
<td>modmarcom</td>
<td>825</td>
<td>0.00</td>
<td>5.00</td>
<td>2.4763</td>
<td>1.38377</td>
</tr>
<tr>
<td>traditmarcom</td>
<td>825</td>
<td>0.00</td>
<td>5.00</td>
<td>2.5615</td>
<td>1.32960</td>
</tr>
<tr>
<td>international</td>
<td>825</td>
<td>0.00</td>
<td>1.00</td>
<td>0.3695</td>
<td>0.48296</td>
</tr>
</tbody>
</table>

Sources: developed by the authors.

Table 2 shows the odds ratio greater than 1 (Exp (B)). It indicates that the probability of increasing business innovation \( P(Y = 1) \) increases as the related independent variable increases. In contrast, the odds ratio less than 1 indicates that the probability of increasing innovation is lower as the related independent variable increases. If the value of 1 is subtracted from the probability coefficient and then multiplied by 100 \( \text{[(odds-1 ratio) x100]} \), values above 100 indicate an increase, while values below indicate a decrease.

Table 2. Equation variables

<table>
<thead>
<tr>
<th>Indicators</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>traditmarcom</td>
<td>0.123</td>
<td>0.098</td>
<td>18.771</td>
<td>1</td>
<td>0.000</td>
</tr>
<tr>
<td>X2</td>
<td>modmarcom</td>
<td>0.407</td>
<td>0.091</td>
<td>20.219</td>
<td>1</td>
<td>0.000</td>
</tr>
<tr>
<td>X3</td>
<td>international</td>
<td>0.719</td>
<td>0.165</td>
<td>19.077</td>
<td>1</td>
<td>0.000</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>2.580</td>
<td>0.239</td>
<td>116.289</td>
<td>1</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Note: **B**, estimated coefficient; S.E., standard error; Wald, the ratio of B to S.E., squared; df, degrees of freedom; Sig., the level of statistical significance (p value); Exp(B), odds ratio

Sources: developed by the authors.

\[
P(Y = 1) = \frac{1}{1 + e^{(-2.580+0.123x1+0.407x2+0.719x3)}}
\] (2)

For example, if 1 is subtracted from the odds ratio of the variable X1 and then multiplied by 100, the result \( (1.526-1) \times 100 = 52.6\% \). In short, if X3 increases by one unit, the probability of increasing the company's innovation will increase by 52.6%. One increase in the unit in variable X2 increases the probability of business innovation by 50.3%. The last evaluated variable X3 has the biggest impact on the evaluated variables, and when the unit of the variable increases, the rate of innovation increases even from 105.2%. As a result of the analysis, good agreement was assessed by the Hosmer-Leme show test. This statistical test measures the correspondence of the actual and expected values of the dependent variable. In this case, a better model fit is indicated by a smaller difference in the observed and predicted classification (Hair, 2011). The null hypothesis (H0) for the Hosmer and Leme show test is that the data
As a result of the test, H0 was accepted, and the model obtained was compatible with a 0.05 level of significance data set (p = 0.102).

As part of the answers to the main research question – it is stated with certainty that the influence of modern communication tools is evident in the studied societies. The results of investigations directly confirmed this fact. When interpreting the partial research results, the state of all null hypotheses could be rejected.

In the case of hypothesis: The growth of using traditional tools for marketing communication increases the number of innovative companies. It could be stated that traditional marketing communication tools led to a 12.3% increase in innovation in the surveyed companies. In contrast, under the hypothesis:

The growth of using modern marketing communication tools increases the number of innovative companies. It is stated that using modern communication tools, more than a 40% increase in innovation in the surveyed companies. Within the established hypothesis: Changing business from the national to the international level leads to an increase in innovative companies, it is stated that in over 70% of the surveyed companies, which moved from the national to the international environment, their innovations would be increased.

Results. This statistical survey shows that all examined factors are statistically significant for improving companies’ innovations, both traditional and modern marketing tools. The internationalization of companies also proved to be relevant when this factor proved to be the most recognized. On the other hand, the internationalization of a company is very costly and complicated.

From this point of view, it was better to look closer at the tools of the modern marketing community to find possible reserves in the use of these tools. To better interpret the results, it was decided to supplement this type of evaluation by calculating the area network graph for the overall results of innovative or non-innovative businesses and the impact of the size of individual companies examined. The method mentioned above gives a new perspective on using marketing communication tools in companies. A formula for calculating the area of a graph was recalculated in Excel. There are n values of v1, vn in the graph.

\[ v_{n+1} = v_1 \]  

The area S of a polygon is the sum of the areas n of the triangles whose vertices are the center of the graph and two consecutive vertices of the polygon. According to sinusoidal law, each of them has the area:

Then the calculation S continues as follows:

\[ S_i = \frac{v_i v_{i+1} \sin \left( \frac{2\pi}{n} \right)}{2} \]

The formula represents S-area:

\[ S = \sum_{i=1}^{n} S_i \]

The size of the area was found to represent the values in the network graph using the formula for calculating the area of graphs for individual parameters. Based on this data, it could determine the impact of individual tools of modern marketing communication. Figure 1 shows the results of individual tools of the examined modern marketing communication from the point of view of the size of companies and whether it is an innovative or non-innovative business.

The obtained results showed that modern marketing communication tools are better for innovative businesses than non-innovative ones from all the examined points of view. This difference is up to 14.7%. On closer examination, the most balanced situation is in medium-sized enterprises, where the difference
is only 7.03% compared to micro-enterprises (18.6%). Innovative micro-enterprises were the best placed in evaluating modern marketing communication tools (25,714), followed by small innovative enterprises (25,298) and medium-sized enterprises (19,886).

Figure 1. Evaluation of modern marketing communication tools on Innovative and Non-innovative Sources: developed by the authors.

It is stated that the use of modern marketing communication tools could be considered as an area with visible reserves in the use of newer marketing communication tools. Above all, targeted mobile marketing can be considered as an area for effective improvement, with greater use being found to increase business innovation. The results correspond to the findings presented in research in recent years, where the growing importance of modern marketing communication tools is evident (Nieves-Casasnovas and Lozada-Contreras, 2020; John and De’Villiers, 2020; Svajdova, 2019; Sabaityte et al., 2018).

Conclusion. The COVID-19 pandemic has had an enormous impact on the use of marketing tools. For a time, work shifted from office space to a virtual form to households. Just as working life has changed,
so has the way of using marketing tools. When imprisoned the population for several months in households, it has forced the business environment to respond. The most significant impact occurred in the way companies communicate with the client. This situation has just been reflected in the change of approach to the use of online communication tools. This research has proved that the companies using modern online tools’ potential have taken the right step. The obtained results have demonstrated the connection between the innovation of companies and the use of modern or traditional communication tools. One of the key findings indicated the modern methods of communication had a significant impact on the companies’ innovation (more than 40%). Given the research limitations, the Slovak consumer showed significantly lower interest and skills in online shopping tools than other European consumers. That is the key factor that causes lower skills customers are more resistant to online marketing tools. Companies with better pro-client behavior and appropriate modern online communication should better take advantage of potential growth. Using modern online marketing tools is the way to attract new market possibilities. Given the change in customer behavior caused by the pandemic, it is undoubtedly important to reorient company interest from traditional to modern online communication tools. The undeniable fact remains that companies that capture this trend will be more successful in the business world. Future research offers some very readable issues to explore. It will be interesting to observe the gradual improvement of Slovak customers and their online skills after the pandemic time, especially the influence of online marketing tools. Moreover, it would make sense to provide deep research into the adaptability changes of online skills focusing on men and women, indeed separately.


**Funding.** This paper is the output of a national scientific project financed within the framework of the project VEGA 1/0813/19 Managing the development of innovative and start-up forms of businesses in international environment and verification of INMARK concept and IGA 4/2020-M (VSEMvs) Regional disparities in small and medium-sized enterprises in the V-4countries and in Ukraine.

**References**


H. Krchova, K. Svejnová Hoesova. The Impact of Modern Communication Marketing Tools to Increase the Innovativeness of Business

Вплив сучасних інструментів маркетингових комунікацій на підвищення інноваційності бізнесу

Метою статті є аналіз впливу інструментів маркетингових комунікацій на рівень інноваційності малих та середніх підприємств Словаччини. Авторами відмічено, що у відповідь на викиди пандемії COVID-19 більшість компаній були змушені перевести бізнес-процеси у дистанційний формат. Таким чином, використання онлайн-технологій забезпечило функціонування низького рівня бізнес-процесів, зокрема підтримку продаж, маркетинг, спілкування між співробітниками та стейкхолдерами тощо. При цьому адаптація до нових умов, спричинена зміни у купівельних звичаях споживачів. Емпіричне дослідження проведено на основі панелевих даних, сформованих для вибірки з 625 менеджерів та/або власників маліх та середніх підприємств Словаччини. Методологія даного дослідження заснована на використанні інструментарію репресіїваного аналізу. Отримані результати засвідчили, що трійці і сучасні інструменти маркетингових комунікацій сприяли підвищенню рівня інноваційності компаній. Авторами визначено вплив інтернаціоналізації бізнесу на його інноваційний розвиток. Для емпіричної обґрунтування висунутої гіпотези авторами застосовано метод розрахунку площ побудованих багатокутників. Результати дослідження дали підстави стверджувати, що сучасні інструменти маркетингових комунікацій були на 14,7% ефективнішими у вигляді інноваційних компаній, у порівнянні з неінноваційними. За отриманими результатами дослідження визначено низку можливостей для вдосконалення сучасних інструментів маркетингової комунікації, а саме застосування технологій штучного інтелекту в онлайн-комунікаціях зі стейкхолдерами за допомогою мобільних маркетингових програм, аналітичних інструментів або чат-ботів.

Ключові слова: маркетингові комунікації, інтернаціоналізація, МСП, трійційний маркетинг, сучасний маркетинг, онлайн-маркетинг.