# DIGITALES ARCHIV

ZBW – Leibniz-Informationszentrum Wirtschaft ZBW – Leibniz Information Centre for Economics

Juracka, Denis; Valaskova, Katarina; Janoskova, Katarina

Article

## Sharing economy as unconventional alternative to traditional transport services

**Provided in Cooperation with:** National University of Political Studies and Public Administration, Bucharest

*Reference:* Juracka, Denis/Valaskova, Katarina et. al. (2023). Sharing economy as unconventional alternative to traditional transport services. In: Management dynamics in the knowledge economy 11 (4), S. 338 - 351. https://www.managementdynamics.ro/index.php/journal/article/download/556/482/2552. doi:10.2478/mdke-2023-0021.

This Version is available at: http://hdl.handle.net/11159/652787

Kontakt/Contact ZBW – Leibniz-Informationszentrum Wirtschaft/Leibniz Information Centre for Economics Düsternbrooker Weg 120 24105 Kiel (Germany) E-Mail: *rights[at]zbw.eu* https://www.zbw.eu/econis-archiv/

Standard-Nutzungsbedingungen:

Dieses Dokument darf zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden. Sie dürfen dieses Dokument nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, aufführen, vertreiben oder anderweitig nutzen. Sofern für das Dokument eine Open-Content-Lizenz verwendet wurde, so gelten abweichend von diesen Nutzungsbedingungen die in der Lizenz gewährten Nutzungsrechte.

https://zbw.eu/econis-archiv/termsofuse

#### Terms of use:

This document may be saved and copied for your personal and scholarly purposes. You are not to copy it for public or commercial purposes, to exhibit the document in public, to perform, distribute or otherwise use the document in public. If the document is made available under a Creative Commons Licence you may exercise further usage rights as specified in the licence.





Leibniz-Informationszentrum Wirtschaft Leibniz Information Centre for Economics

### Sharing Economy as Unconventional Alternative to Traditional Transport Services

#### Denis JURACKA<sup>1</sup>, Katarina VALASKOVA<sup>2</sup>, Katarina JANOSKOVA<sup>3</sup>

- <sup>1</sup> University of Zilina, Univerzitna 1, 010 26 Zilina, SK; <sup>b</sup> juracka2@stud.uniza.sk
- <sup>2</sup> University of Zilina, Univerzitna 1, 010 26 Zilina, SK; <sup>1</sup> katarina.valaskova@fpedas.uniza.sk (corresponding author)
- <sup>3</sup> University of Zilina, Univerzitna 1, 010 26 Zilina, SK; 🔟 katarina.janoskova@fpedas.uniza.sk

Received: September 5, 2023 Revised: October 5, 2023 Accepted: October 8, 2023 Published: December 10, 2023

Abstract: The sharing economy, as a developing business model, is becoming more and more popular. This phenomenon can be observed in many countries. The sharing economy, as a part of human life in its essence, has existed for a long time. In general, the sharing economy is considered an economic model where individuals or organizations share a certain type of property or, in this way, provide services for a financial reward. One of the most used sectors, where there is constant interest, is the shared transport of people, goods, and services. However, platforms operating in the shared transportation segment should be analysed from various points of view, such as their financial results and overall economic stability. The study is primarily focused on the sector of shared transport and transport services. The chief objective of the study was to demonstrate the impact of the COVID-19 pandemic on shared transport and transport services within the territory of the Slovak Republic. The analysis included ride-hailing platforms such as Bolt Services SK as well as food and dining delivery platforms such as Wolt Slovakia. Through appropriately chosen methods of financial and economic analysis, the situation of the platforms before and during the COVID-19 pandemic was determined. We also performed an analysis of the development of the number of cars and the related level of automobilization in the territory of the Slovak Republic, since the shared economy represents an alternative to conventional economic models.

**Keywords:** collaborative consumption; sharing economy; sector of shared transport; COVID-19 pandemic; transport services; financial analysis.

#### Introduction

The development of the sharing economy business models is one of the features of the digital economy. The main reason for this is digital globalization and the emergence of new consumption patterns (Lyaskovskaya & Khudyakova, 2021). The trend toward sharing, also due to unpredictable exogenous influences and externalities, is difficult to predict. The economic situation in countries, political influences, or uncontrollably spreading viruses and diseases indicate that even in sharing economy, it is only possible to predict. The COVID-19 pandemic only accentuated and deepened the differences in progress and in the use of available goods, products, and services between companies that had sufficient capital to handle this situation or were able to adapt. In practice, business entities must react to emerging situations. The economic models of individual countries are also undergoing changes (Graessley et al., 2019; Popescu & Ciurlău, 2019). One such change is the sharing economy, which can be considered an innovative economic model. At the beginning, however, it is necessary to go through a brief historical development of this economic model. In essence, it is possible to generalize that sharing is as old as humanity itself. There was no precise and universally accepted definition in the past, and there is none today that would clearly and precisely name this phenomenon. Despite this, there are countless definitions considering the socioeconomic character of this phenomenon.

The first attempt at a certain characteristic came from the authors Felson and Spaeth (1978), who introduced the term "collaborative consumption". This term has practically

#### How to cite

Juracka, D., Valaskova, K., & Janoskova, K. (2023). Shared Transport as Unconventional Alternative to Traditional Transport Services. *Management Dynamics in the Knowledge Economy*, *11*(4), 338-351. DOI 10.2478/mdke-2023-0021 ISSN: 2392-8042 (online) *Journal Abbreviation: Manag. Dyn. Knowl. Econ.* 

https://content.sciendo.com/view/journals/mdke/mdke-overview.xml

been considered synonymous with the sharing economy until now. These authors defined this term in 1978 as events in which one or more people consume economic goods or services in the process of engaging in activities with one or more people. A breakthrough in the understanding of sharing occurred with the publication of the book by the authors Botsman and Rogers (2010), who describe the sharing economy as an economic model that supports the use of ownership and enables the optimization of consumption through the sharing, exchange, rental, and provision of products and even services. The innovation of these authors mainly lies in the fact that they used the word combination "economic model".

The sharing economy is closely related to concepts such as sustainability and the circular economy. One of the most discussed and significant reasons why many countries support the sharing system is sustainability and the fact that the sharing system can benefit not only individuals but also the state itself in environmental issues. The circular economy is an emerging concept that consists of the reduction and elimination of waste and environmental pollution (Perkumiene et al., 2021). Integration of the circular economy system and its elements into business activities presents new business opportunities. The transition from linear production and consumption to a circular economy system can gradually become a reality, not only from the point of view of legislative changes but also from the point of view of public opinion (Hanulakova et al., 2021).

The study is primarily focused on the sector of shared transport and transport services. The chief objective of the study was to demonstrate the impact of the COVID-19 pandemic on shared transport and transport services within the territory of the Slovak Republic. This study is one of the pioneering studies in the Slovak environment, where these services are mostly provided in the sectors of food and transportation, and thus it can be helpful for authorities in the context of the strategy development for this sector of the economy.

Sharing economy platforms and the shared transportation platforms analyzed by us represent a specific category that, in our opinion, is not fully explored. In every country where these platforms operate, there are differences, either in functioning, financing or in the structure of own resources. However, certain common features also apply, such as the quantification of the ratios in which the indicators can be placed in the country. These common features can be observed, for example, in the values of high indebtedness. At the same time, the indicators of the financial situation of the platforms represent an important way for the overall functioning of the platforms. Due to the fact that platforms are constantly expanding, our research is also a part of research that needs to be expanded on an international scale as well. Thus, the research question is as follows:

RQ: How has the COVID-19 pandemic affected the stability and financial situation of sharing economy platforms operating in the transport and transport services sector, and how does shared transport affect the transport situation?

The paper is divided as follows: The literature review section depicts the relevant and upto-date studies that were published worldwide and maps this research issue. The second section of the paper describes the methods used, and finally, the research outputs are presented together with a discussion of the results in a broader context. The conclusions portray crucial outputs, limitations, and future research challenges.

#### Literature review

The sharing economy primarily tries to propose what different alternatives the inhabitants of a country have in their daily activities. It compares a new and sophisticated way of perceiving transactions, exchanges, and the cooperation of individuals, businesses, and other entities with each other with the linear system on which the economies of the countries of the world operate in a market-driven system. Foreign authors have been

addressing this phenomenon since the beginning of the formation of the platform. Among the most important, it is necessary to mention Isaac (2019) who analyzes one of the most famous sharing economy platforms known under the name Uber and explains what stage the company is in some cases and what life cycle these new, usually technological companies have to go through. It also emphasizes technological maturity and a willingness to take risks. Most platforms enter the market as unknown start-ups, i.e., companies that, with their ideas, riskiness, and undetermined entry costs, try to overcome the competition and, with the functioning of the platform, enable the development of the segment in which they operate and, ultimately, the development of the society (Stone, 2017).

Sharing economy and its rapid development are also caused by scientific and technical progress. It is mobile applications that form the most important element that allows connecting supply with demand, that is, those who provide their services through sharing economy platforms and thereby earn money, and on the other hand, those who are willing to use and pay for such a service. It is these applications that enable a more flexible way of doing things compared to classic taxi services. Wynn and Jones (2022), who point to a new label that has significantly expanded due to the expansion of the Internet—the digital economy. Digitization is increasingly penetrating all spheres of human life. As a result of digitization, businesses optimize their production processes, ensuring a smoother logistics chain from processing raw materials to finalizing the product and its delivery to customers. The shared economy, by its operation, falls precisely into the segment of the digital economy.

Many states agree and are inclined to believe that the modern economy must be at least partially regulated because it lacks basic rules. Their absence is also addressed by the European Commission, which aims to support consumers, businesses, and public authorities so that all participating entities trust the collaborative economy. The sharing economy is seen by many as Europe's success in developing new business models. Certain changes are necessary in this case, as they will help eliminate the mechanism without conditions and contribute to the creation of fair competition in market conditions. Jingfang and Yates (2020) point to a fact that must be considered in today's dynamically developing world. The perception of the sharing economy as an undesirable business model for individual countries is not justified. We are already experiencing massive digitization based on the sharing of information, assets, and human capital. According to these authors, businesses operating in a market economy often fail to understand that sharing economy platforms do not need to compete and prosper at their expense. Sharing will help companies thrive by rethinking their standard models of hierarchy, power, and bureaucracy and their assumed rules of engagement, offering a holistic approach to change with practical techniques and examples. Digital platforms pose a special set of problems for regulators, workers, and rivals in the traditional economy. The technological aspect of sharing has been made possible by digitalization, as well as the social part of sharing, which has been made possible by working outside of small groups and personal relationships (Pour & Hilti, 2021). In the age of digital technology, the sharing economy is recognized as a new economy. There are many reviews of the sharing economy available, but none have, as of yet, provided sufficient insight to enable comprehension of the similarities and differences between consumers and producers in the sharing economy (Tham et al., 2022).

The sharing economy is closely linked to and related to the circular economy. The sharing economy may help sustainably reshape cities by altering institutionalized behaviours surrounding resource distribution (Enochsson et al., 2021). Environmental problems that today's world must deal with are a signal of the search for alternative ways, including in the transport of people, goods, and services. In this context, a great effort is made to describe and provide examples of how sharing and sustainability can coexist. The collective of authors, Bogusz et al. (2021) or Hollowell et al. (2019), outline one of the important environmental problems of the community of European Union countries: municipal waste and waste management. They point to the necessity of transforming waste and its subsequent recycling and taking more significant steps in the states around

the world. At the same time, they emphasize the necessity of focusing attention on enterprises operating in industrial production, which represent one of the biggest sources of air pollution. Adam et al. (2021) focus their study on the environment during the COVID-19 pandemic. They point to a direct link between the measures introduced to prevent free movement and travel and their effects on the environment. The change mainly concerned the reduction of the concentration of pollutants in the air. Tai (2022) discusses responsible business, i.e., corporate social responsibility (CSR), which can be implemented through three pillars: environmental, social, and corporate governance, known by the abbreviation ESG.

Kubalak et al. (2021) in their study point to the causal impact of the pandemic COVID-19 on the sector of shared transport services and on the sector of public transport. It discusses how the COVID-19 pandemic affected this entire segment and how the number of confirmed cases of this disease also affected the use of public transport. The study by Suchanek et al. (2019) points to the fact that within the framework of transport and the traffic situation, residents are influenced by several factors, such as the purpose of the trip, lifestyle, the number of cars that individual households have at their disposal, the quality and availability of transport infrastructure, the duration of the trip by different types of transport, and more. The authors appeal to the understanding and study of consumer behaviour from the point of view of sustainable development. At the same time, the Bolt platform has carried out its own research, which presents the practical steps that the introduction of shared transport in various forms will have on the environment and transport in the German metropolis of Berlin (Bolt City Vision, 2022).

#### Methods

It was necessary to consider not only what the sharing economy system can bring to citizens but also the economic and financial situation of shared transport platforms in the territory of the Slovak Republic. For these purposes, the ratio method of financial analysis was chosen, specifically the analysis of indebtedness and liquidity. Initially, it was necessary to map and quantify the level of sales on the platforms. The use of a debt is associated with the management of corporate indebtedness, requiring monitoring of the entire financial performance of the company (Gajdosikova et al., 2023). Indebtedness is a common and widely known concept, whether at the level of a country or within a company. Indebtedness is considered by every business owner, partner, shareholder, and investor as one of the key parameters when assessing the state of the business. It is also necessary to mention the concept of CSR (Corporate Social Responsibility), one of its pillars being the ability to repay debts. The company should be able to repay debts on time in the amount due, including the agreed interest (Kramolis & Dobes, 2020).

Our comprehensive analysis was based on financial data received from the Register of Financial Statements of the Slovak Republic. The Register of Financial Statements was created to improve and simplify the business environment and reduce the administrative burden on businesses. In the Register of Financial Statements, it is possible to find out and search for information such as available financial statements and other documents published in the register. It is also necessary to focus on profitability. It is generally assumed that the business wants to achieve the highest possible profit (Tamuluviciene, 2016). Profitability is considered one of the key attributes in assessing the success of a company on the market. The overall profitability of businesses is influenced by various factors and can be measured and quantified through various indicators (Herciu & Ogrean, 2017).

Profitability is closely linked to liquidity. Liquidity refers to the concept associated with small and medium-sized enterprises or their ability to pay current liabilities when they fall due (Kontus & Mihanovic, 2019). Liquidity consists of several indicators. Current ratio informs what part of short-term external financial sources a business entity can pay from liquid assets. Quick ratio expresses and reduces short-term assets by inventories. In

essence, the value of this indicator informs the company about what part of short-term liabilities is covered by financial assets if inventory is not sold. Cash ratio is an indicator that has the broadest concept among all liquidity indicators. It informs about the ratio of the company's short-term assets to short-term external financial sources (Lalithchandraa & Rajendhiran, 2021; Mathews et al., 2021).

Ratio (Liquidity)	Formula	
Current Ratio	$\frac{Current\ assets}{Current\ liabilities}\ (1)$	
Quick ratio	<u>Current assets – Inventories</u> (2) Current liabilities	
Cash Ratio	$\frac{Cash + Cash Equivalents}{Current Liabilities} (3)$	

Table 1. Formulas of financial liquidity
--

Source: Lalithchandraa and Rajendhiran (2021); Mathews et al. (2021)

When evaluating the performance and overall stability of the company, the quantification of indebtedness is important. Indebtedness does not have to be a negative characteristic for the company. A higher value of total indebtedness implies a higher financial risk of instability. However, its growth can contribute to increasing the company's profitability. The indicator of total indebtedness expresses the extent to which the company is financed from external financial sources. It is an expression of the structure of financial resources, which indicates the extent to which the company's assets are covered by external financial sources. It is important to interpret the result of the given indicator after considering the segment in which it operates. Short-term indebtedness provides information on what percentage of the company's total assets are short-term liabilities. Short-term liabilities are liabilities whose maturity is less than one year. Long-term indebtedness provides information on how many percent of the company's total assets are long-term liabilities, that is, those whose maturity is longer than one year. The level of self-financing informs the company about what percentage of the assets are covered by its own resources (Al-Shubiri, 2012; Baran et al., 2016).

Ratio (Liquidity)	Formula
Total Indebtedness	$\frac{Total\ liabilities}{Total\ assets}\ (4)$
Short term Indebtedness	$\frac{Total \ short \ term \ debt}{Total \ assets} \ (5)$
Long term Indebtedness	$\frac{Total\ long\ term\ debt}{Total\ assets}$ (6)
Level of self-financing	$\frac{Equity}{Total\ capital}\ (7)$

Table 2. Formulas of indebtedness

Source: Al-Shubiri (2012); Baran et al. (2016)

Therefore, as part of the investigation, we examined two platforms: Bolt Services SK and Wolt Slovakia. We were the first to analyze the Bolt platform. Bolt platform is the first European mobility application. In 2023, platform operates on a total of five continents, covering 45 countries. It has more than 150 million customers and 3.1 million couriers and drivers (Bolt About Us, 2023). Bolt platform has only been operating in the territory of the Slovak Republic since 2019. That is why the sales analysis covered this period. The sales analysis of Bolt Services SK is important from various points of view. In the period before the outbreak of the COVID-19 pandemic, the company recorded sales of almost 170.000  $\notin$ . In 2020, it is possible to observe a sharp increase in sales registered at the threshold value of 1.160.000  $\notin$ . In 2021, when strict anti-pandemic measures were applied, especially at the beginning of the year, the value of sales increased significantly. This year, sales reached 3.030.000  $\notin$ , which represents an increase in Bolt's sales, it is

necessary to specify certain facts. An important aspect is the diversification of the portfolio of activities itself. In the initial phase of the operation of digital platforms within the mediation of transport services, when these companies were just start-ups, they mostly provided only one type of service: transporting people from the pick-up point to the destination. However, with the development of this industry, they modified the platforms and were able to add new possibilities to provide users with a new kind of service. Similarly, this statement can be applied to Bolt as well. Passenger transportation continues to be a core activity. Additional activities are food delivery, grocery delivery, scooters, and the new Bolt Business.



Figure 1. Graphic presentation of the Bolt platform's operation in the world Source: Bolt About Us (2023)

We also performed a revenue analysis for the Wolt Slovakia platform. Wolt is a technology company known for its food delivery platform. Wolt's platform makes it easy for customers to order whatever they need on one application. Wolt delivers services in over 100 cities in 23 countries and to 7 million customers from 27 000 restaurants. Within the international space, it operates in countries such as Sweden, Finland, Estonia, Denmark, Lithuania, Latvia, Croatia, the Czech Republic, Norway, Hungary, Georgia, Israel, Poland, Serbia, Greece, Azerbaijan, Slovenia, Slovakia, Kazakhstan, Cyprus, Malta, Japan, and Germany (Pap et al., 2023). Wolt has only been operating in the territory of the Slovak Republic since 2019, so we examined the period from 2019 to 2021. In 2019, the Wolt Slovakia platform recorded sales of only 71.323 €. At the time of the start of the COVID-19 pandemic, in 2020, the company recorded sales in the amount of 3.529.889 €. In 2021, sales reached the highest amount of 12.172.758 €. In statistical terms, this increase represented an increase in sales of up to 245 %. The Wolt platform showed that during the COVID-19 pandemic and related security measures to prevent the spread of this virus, delivery services, which Wolt also falls under, were able to profit. Especially in 2020 and 2021, when the following measures are applied: the prevention of free movement to eliminate the spread of the virus; the minimization of personal contact; and the closing of business establishments except for essential ones. A large part of the activities has moved to the "online space". Meal and food delivery services were an easy and safe way to get food.

After analyzing the sales, we also quantified the indicators of liquidity and indebtedness. Liquidity indicators provide information on the company's ability to meet its obligations. Table 3 shows the results of the examination of liquidity indicators. The values of the current ratio range from 0.211 to 0.624, and the platforms account for  $0.21 \notin to 0.62 \notin of$  funds on the accounts for  $1 \notin of$  short-term liabilities. From the point of view of the analysis, the year 2020 is important, i.e., the period when the COVID-19 virus began to spread in Europe at the beginning of the year. During this period, we recorded the high

values for both platforms, which represented a positive signal and trend for the functioning of the platforms. For the values of the quick ratio, we register more significant differences. The results of this indicator range from 0.707 to 1.747 within the investigated platforms. This means that platforms have between 0.71  $\in$  and 1.75  $\in$  of non-inventory current assets per 1  $\in$  of short-term liabilities. The situation is the most different for the cash ratio. For this indicator, the values range from 0.980 to 1.747. Cash ratio informs us about the ratio of the company's short-term assets to short-term liabilities. This means that platforms have 0.98  $\in$  to 1.75  $\in$  of current assets for 1  $\in$  of short-term liabilities. We register significantly more values that are below the acceptable limit, which may indicate problems with sufficient funds to manage and operate the platforms.

Platform	Year	Ratio (liquidity)	Quantification of the indicator
Bolt Services SK	2019		0.389
	2020		0.577
	2021	Current Ratio	0.621
Wolt Slovakia	2019		0.211
	2020		0.624
	2021		0.233
Bolt Services SK Wolt Slovakia	2019		1.747
	2020		1.184
	2021	Outob Datio	0.845
	2019	Quick Ratio	0.707
	2020		0.858
	2021		0.738
Bolt Services SK	2019		1.747
	2020		1.204
	2021	Cash ratio	0.980
Wolt Slovakia	2019	Casil Latio	1.020
	2020		1.055
	2021		1.047

Table 3. Quantification of liquidity indicators

Source: own processing based on data in Register of Financial Statements (2023a) and Register of Financial Statements (2023b)

We also continued with the debt analysis. Table 4 shows the results of the examination of indebtedness indicators. The value of the indicator of total indebtedness in the case of the Bolt platform is continuously increasing, which naturally has the effect of gradually reducing the indicator of level of self-financing. Short-term indebtedness continuously increases over time due to short-term obligations. Long-term debt amounts to less than 1%. It is precisely with these indicators that a situation arises where almost the entire amount of the total indebtedness consists of short-term indebtedness. We also analysed the Wolt platform. The values of total indebtedness range from roughly 94% to 98%. This situation is caused by the fact that the operation of the platform is based exclusively on short-term debt, which consists of the payment of short-term liabilities and the collection of almost exclusively short-term receivables. With the Wolt Slovakia platform, we observe a trend where the level of self-financing reaches very low values, even when compared to the Bolt Services SK platform.

Platform	Year	Ratio (indebtedness)	Quantification of the indicator
Bolt Services SK	2019	Total Indebtedness	55.94 %
	2020		70.51 %
	2021		79.75 %
Wolt Slovakia	2019		98.08 %
	2020		94.46 %
	2021		94.65 %

Table 4. Quantification of liquidity indicators

r			
Bolt Services SK	2019		55.25 %
	2020		69.63 %
	2021	Short-term	79.05 %
Wolt Slovakia	2019	Indebtedness	98.04 %
	2020		94.46 %
	2021		94.65 %
Bolt Services SK	2019		0.70 %
	2020		0.88 %
	2021	Long-term Indebtedness	0.70 %
Wolt Slovakia	2019		0.04 %
	2020		0 %
	2021		0 %
Bolt Services SK	2019	44.06 %   29.49 %   20.25 %   1.92 %	44.06 %
	2020		29.49 %
	2021		20.25 %
Wolt Slovakia	2019		1.92 %
	2020		5.54 %
	2021		5.35 %

Source: own processing based on data in Register of Financial Statements (2023a) and Register of Financial Statements (2023b)

It is necessary to consider one of the most important factors and one of the reasons why shared transport is important and needs to be given due attention. Shared transport represents an alternative and often cheaper form of transport, especially in cities. Traffic and the traffic situation on the territory of the Slovak Republic are complicated and difficult in many cities. This fact also contributed to the expansion and popularity of shared transportation. The level of automobilization is an indicator that talks about the number of inhabitants per passenger vehicle (Gogola, 2010). Table 5 shows the development results of level of automobilization in the Slovak Republic. Because of the analysis performed, we can claim that from 2000 to 2022, during the entire examined period, this indicator had a decreasing character. This means that in the studied periods, there were fewer and fewer residents per passenger vehicle. For example, in 2000, there were approximately 3 residents per passenger vehicle. In 2020, according to statistical terminology, there are approximately 1.58 residents per passenger vehicle. From a practical point of view, it follows that the first problems in the field of transport are caused by the limit of this indicator at approximately 5 residents per passenger car. In such a situation, there are already problems with parking, safety, and the flow of road traffic. A critical situation already occurs when the level of automobilization reaches a value of 2.5 residents per passenger car in urban areas, when it is possible to observe the gradually forming congestion of cars at the entrances to urban areas and related problems with parking spaces. Shared transportation is not intended to replace car ownership. However, it is constantly necessary to look for new and innovative solutions. Shared transport of people, goods, and services represents such an option.

Year	Number of residents per vehicle
2000	3.08
2005	2.99
2010	2.32
2015	1.91
2020	1.63
2021	1.58
2022	1.54

Table 5. Development of level of automobilization in the Slovak Republic

Source: own processing based on data in the Ministry of the Interior of the Slovak Republic (2023)

#### Discussion

Road transport is very important for overall economic growth and development. It is the most advanced and most used form of transportation in Slovakia. Infrastructure density is still average compared to other European Union countries (Garbarova & Strezova, 2015). In the long term, the automotive industry is considered one of the main factors driving economic growth in Slovakia. In 2019, 202 passenger cars were produced per inhabitant, with the automotive sector being one of the main sources of employment (Strategic Plan for the Development of Transport in the Slovak Republic by 2030, Phase II, 2016). Regarding transportation, car hailing is one of the most common business models in the sharing economy (Cheng et al., 2018). Shared transportation is closely related to the traffic and traffic situation in the given country.

The term "sharing" has become very popular in recent times. The sharing economy has become a subject of interest not only among researchers or stakeholders but first and foremost among ordinary people (Soltysova & Modrak, 2020). The society is in the stage of the Industrial Revolution (Industry 4.0), which is a result of continuous development. Progress in the field of science and technology includes faster communication, complex processing of large amounts of data, new production and technological procedures, the transition of many activities to the digital space, and automation of processes (Bednarikova & Kostalova, 2021; Popescu & Olah, 2020). All these factors influence the emergence of new models that often compete with conventional economic models. The sharing economy is often described as a phenomenon promoting more sustainable consumer practices, such as access to ownership. In the area of transportation and the transportation of people, goods, and services, it is obvious that the increase in the number of automobiles owned can bring a higher standard of living for residents, a higher social status, but also an increasingly complicated traffic situation.

Travel and transport have been affected by the COVID-19 pandemic. The pandemic also had a positive impact on the environment through the reduction of emissions in the air, but it also had limitations (Vichova et al., 2021). The authors' studies deal with various areas of the functioning of the sharing economy. A study by Vinod and Sharma (2021) examines the impact of the COVID-19 pandemic on the use of the Airbnb and Uber platforms in India. The authors obtained information in their analysis that confirms the following facts and findings: Consumers are prioritizing pandemic measures and health. This was responsible for the reduced demand for shared accommodation services. It was significant decrease compared to the period before the COVID-19 pandemic. The study by the authors Fialova and Vasenska (2020) declares that the segment of shared accommodation services in the Czech Republic and Slovak Republic is the most affected. Hosts have lost customers due to travel restrictions. The consequences were worse than expected. The authors also analyse the capital of the Slovak Republic, Bratislava, where, at the time of the beginning of the pandemic and measures to limit the spread of the COVID-19 virus, less than a thousand properties were registered on the Airbnb platform. The research was carried out within the territory of the Slovak Republic; specifically, the platforms Bolt Services SK and Wolt Slovakia were subjected to analysis. We selected a representative from the industry of passenger transport and delivery services in the shared economy as part of our investigation.

Within these shared transportation services, there are also other platforms such as Uber, Lyft, and Blablacar. Uber was nominated as one of the most valuable start-ups in 2018. Airbnb is a well-known platform in the field of accommodation services (Kim & Suh, 2021). Platform Airbnb is one of the most successful examples of the sharing economy business model (Gogolova et al., 2022; Kourtit et al., 2022). Wolt Slovakia delivery platform itself states that up to 91% of all orders via Wolt bring restaurants extra sales. So, these are orders that the restaurants would not have received if they did not cooperate with the Wolt platform (Wolt for restaurants, 2023). The sales of the Wolt platform already had an increasing character in 2019, when they were recorded at a value of 87.4 million  $\notin$ . In 2020 and 2021, we will see enormous sales growth. In 2020, up to 164.3

million  $\notin$ , and in 2021, 164.5 million  $\notin$ . At the same time, however, the Wolt platform showed a loss as a total annual result during these years (Pap et al., 2021; Wolt Enterprises Oy, 2023). Since the research is focused on the operation of shared transport platforms within the territory of the Slovak Republic, it can be concluded that platforms that offer mainly conventional services, such as the transport of people, goods, and services, and in recent years due to the COVID-19 pandemic, have prevailed in this area, expanding food and grocery delivery services in Slovakia. However, there are also other non-traditional platforms operating in the hospitality, commerce, financial sector, courier and logistics services, software, knowledge and media sharing, skills sharing, goods marketplaces and distribution, and other segments (Haqqani et al., 2022; Mura et al., 2021).

As part of future research challenges, it is important to mention the interests of several countries, not only the Slovak Republic but, for example, the countries of the Visegrad Group (Czech Republic, Poland, and Hungary). Mapping several segments of the sharing economy, especially the sector of accommodation services (Airbnb), also appears to be a research challenge. Practical guidance for the effectiveness and impacts of the introduction of sharing is also provided by the internal research of Bolt City Vision itself, which can also be a guide for the Slovak Republic for more effective application of the sharing economy system at the national level.

#### Conclusions

The financial analysis demonstrated the difference in the functioning of these platforms. Liquidity indicators showed different values. We observed acceptable values especially during the pandemic. In this case, indebtedness does not represent a negative characteristic, especially from the point of view that in the territory of the Slovak Republic, the platforms register almost no long-term tangible assets. Debt is not caused by loans. The COVID-19 pandemic has shown how shared transportation platforms have been able to adapt to the new situation that has arisen. By diversifying the services provided, Bolt Food was able to cover shortfalls in sales associated with passenger transportation, which was limited during the pandemic. Wolt recorded record sales and continues to expand to other European countries. Through an additional analysis of transport, we found that the development forecast is not favourable, and for this reason, we dare to say that shared transport on the territory of the Slovak Republic should have an even greater impact.

In addition to various other impacts caused by the COVID-19 pandemic, it was necessary to find out what economic barriers or benefits platforms in the sector of shared transport and transport services brought to the territory of the Slovak Republic. It was also necessary to examine the functioning of the platforms and the achievement of their economic and financial results, especially through ratio indicators of liquidity and indebtedness analysis. As part of our comprehensive analysis, we managed to find out certain facts that need to be described and summarized. Sharing economy platforms do not operate like normal businesses with an ownership structure (in the absence of a defined framework within the SK NACE classification of economic activities). It is therefore necessary not to compare quantified values with other sectors of the economy, as disproportions and misinterpretations could arise.

The most important fact that we managed to find out was the high level of indebtedness. However, it is not an indebtedness caused by obtaining external financial resources (loans). In this evaluation, however, it is necessary to pay attention to characteristic features that may not apply to other segments of the economy. In the structure of their assets, platforms record a low share of owned long-term tangible assets, a high share of short-term receivables, and a high share of short-term liabilities. This fact also significantly affects the property structure of companies. Platforms, due to the nature of their activity, do not need to own their own vehicle fleet or any other type of vehicle of various kinds. They do not create their own capital but use existing capital, i.e., that used by consumers. Since they are branches, companies operating in Slovakia have almost no intangible assets. However, this fact does not mean that the platforms do not have any intangible assets registered. Non-current intangible assets are reported by parent companies that provide the necessary software to countries where they have decided to expand their business activities.

Research activities in the sharing economy focus on the use of platforms, their popularity, and the advantages and disadvantages of using and providing various services. Research often does not focus on the functioning of platforms, on their financial and economic results, or on differences compared to other, more traditional sectors. We focused on these facts in our analysis.

The research also brings concrete practical consequences for the citizens of the Slovak Republic, as the growth of shared transportation platforms in cities and urban districts can provide an alternative that is more environmentally friendly, can often save consumers time that they would otherwise waste in traffic jams, and overall, shared transportation platforms can provide a more efficient and smoother way of transportation even in combination with public transport. The financial and economic results of shared transport platforms and their interpretation are important from a practical point of view, as the platforms undergo constant development, but in the conditions of the Slovak Republic, their operation (even during the spread of the COVID-19 virus) demonstrated adaptation to new market conditions and the use of their overall platform potential also through diversification of the portfolio of offered services.

Future research challenges must take into account the interests of many nations, including those other than the Slovak Republic, such as the Visegrad Group nations (the Czech Republic, Poland, and Hungary). A study difficulty appears to be the mapping of various sharing economy sectors, especially the industry of lodging services (Airbnb). Sharing economy and its future is not clear. It is therefore necessary to deal with the specific economic and environmental consequences that sharing will bring for a specific state.

#### References

- Adam, M. G., Balasubramanian, R., & Tran, P. T. M. (2021). Air quality changes in cities during the COVID-19 lockdown: A critical review. *Atmosferic Research*, 264, 105823. https://doi.org/10.1016/j.atmosres.2021.105823
- Al-Shubiri, F. S. (2012). Debt Ratio Analysis and Firm Investment: Evidence from Jordan. International Journal of Economics and Financial Issues, 2(1), 21-26.
- Baran, D., Baranova, D., & Pastyr, A. (2016). Financial analysis of a selected company. Research Papers Faculty of Materials Science and Technology Slovak University of Technology, 24(37), 73-92. https://doi.org/10.1515/rput-2016-0008
- Bednarikova, M., & Kostalova, J. (2021). Sharing economy in the Czech Republic. *Hradec Economic Days*, *11*(1), 36-47. https://doi.org/10.36689/uhk/hed/2021-01-004
- Bogusz, M., Matysik-Pejas, R., Krasnodebski, A., & Dziekanski, P. (2021). The concept of zero waste in the context of supporting environmental protection by consumers. *Energies*, *14*(18), 5964. https://doi.org/10.3390/en14185964
- Bolt About Us. (2023). *Earn money with Bolt*. Bolt Blog. https://bolt.eu/en/blog/how-tomake-extra-money/
- Bolt City Vision. (2022). *Bolt's City Vision: Reducing car journeys in Berlin by 25%.* Bolt Blog. https://tinyurl.com/4na983k7
- Botsman, R., & Rogers, R. (2010). What's Mine Is Yours: The Rise of Collaborative Consumption. Harper Collins.
- Curtis, S. K., & Lehner, M. (2019). Defining the Sharing Economy for Sustainability. *Sustainability*, *11*(3), 567. https://doi.org/10.3390/su11030567
- Cheng, X. F. S., & Vreede, G. D. (2018). A mixed method investigation of sharing economy driven car-hailing services: Online and offline perspectives. *International Journal of Information Management*, 41, 57-64. https://doi.org/10.1016/j.ijinfomgt.2018.03.005

- Enochsson, L., Palgan, Y. V., Plepys, A., & Mont, O. (2021). Impacts of the Sharing Economy on Urban Sustainability: The Perceptions of Municipal Governments and Sharing Organisations. *Sustainability*, *13*(8), 4213. https://doi.org/10.3390/su13084213
- Felson, M., & Spaeth, J. L. (1978). Community Structure and Collaborative Consumption: A Routine Activity Approach. American Behavioral Scientist, 21(4), 614. https:// doi.org/10.1177/000276427802100411
- Fialova, V., & Vasenska, I. (2020). Implications of the COVID-19 crisis for the sharing economy in tourism: The case of Airbnb in the Czech Republic. *Ekonomickomanazerske spektrum*, 14(2), 78-89. https://doi.org/dx.doi.org/10.26552/ ems.2020.2.78-89
- Gajdosikova, D., Lazaroiu, G., & Valaskova, K. (2023). How Particular Firm-Specific Features Influence Corporate Debt Level: A Case Study of Slovak Enterprises. *Axioms*, 12(2), 183. https://doi.org/10.3390/axioms12020183
- Garbarova, M., & Strezova, M. (2015). The Trend Analysis of Transport Development in Slovak Republic. *Procedia Economics and Finance, 26*, 584-591. https://doi.org/ 10.1016/S2212-5671(15)00958-2
- Gogola, M. (2010). The comparison of motorisation rate in choosed countries EU}. *Perner's Contacts*, *5*(3), 59-65.
- Gogolova, M., Kovalova, E., & Lizbetinova, L. (2022). The shared economy and the use of the Airbnb platform in Slovakia. *Ekonomicko-manazerske spektrum*, *16*(2), 91-101. https://doi.org/10.26552/ems.2022.2.91-101
- Graessley, S., Horak, J., Kovacova, M., Valaskova, K., & Poliak, M. (2019). Consumer Attitudes and Behaviors in the Technology-Driven Sharing Economy: Motivations for Participating in Collaborative Consumption. *Journal of Self-Governance and Management Economics*, 7(1), 25–30. https://doi.org/10.22381/JSME7120194
- Hanulakova, E., Dano, F., & Kukura, M. (2021). Transition of business companies to circular economy in Slovakia. *Entrepreneurship and Sustainability Issues, 9*(1), 204-220. https://doi.org/10.9770/jesi.2021.9.1(12)
- Haqqani, A. A. H., Elomri, A., & Kerbache, L. (2022). Sharing Economy: A Systematic Review of Definitions, Drivers, Applications, Industry status and Business models. *IFAC-PapersOnLine*, 55(10), 490-495. https://doi.org/10.1016/j.ifacol.2022.09.441
- Herciu, M., & Ogrean, C. (2017). Does capital structure influence company profitability? Studies in Business and Economics, 12(3), 50-62. https://doi.org/10.1515/sbe-2017-0036
- Hollowell, J. C., Rowland, Z., Kliestik, T., Kliestikova, J., & Dengov, V. (2019). Customer Loyalty in the Sharing Economy Platforms: How Digital Personal Reputation and Feedback Systems Facilitate Interaction and Trust between Strangers. *Journal of Self-Governance and Management Economics*, 7(1), 13–18. https://doi:10.22381/ JSME7120192
- Isaac, M. (2019). Super Pumped: The Battle for Uber. W. W. Norton & Company.
- Jingfang, C., & Yates, C. (2020). Share. How Organizations Can Thrive in an Age of Networked Knowledge, Power and Relationships. Bloomsbury Business.
- Kim, H. J., & Suh, C. S. (2021). Spreading the sharing economy: Institutional conditions for the international diffusion of Uber, 2010-2017. *PLoS ONE*, 16(3), e0248038. https://doi.org/10.1371/journal.pone.0248038
- Kontus, E., & Mihanovic, D. (2019). Management of liquidity and liquid assets in small and medium-sized enterprises. *Economic Research-Ekonomska Istraživanja*, 32(1), 3247-3265. https://doi.org/10.1080/1331677X.2019.1660198
- Kourtit, K., Nijkamp, P., Osth, J., & Turk, U. (2022). Airbnb and COVID-19: SPACE-TIME vulnerability effects in six world-cities. *Tourism Management*, 93, 104569. https:/ /doi.org/10.1016/j.tourman.2022.104569
- Kramolis, J., & Dobes, K. (2020). Debt as a financial risk factor in SMEs in the Czech Republic. Equilibrium-Quarterly Journal of Economics and Economic Policy, 15(1), 87-105. https://doi.org/10.24136/eq.2020.005
- Kubalak, S., Kalasova, A., & Hajnik, A. (2021). The Bike-Sharing System in Slovakia and the Impact of COVID-19 on This Shared Mobility Service in a Selected City. *Sustainability*, *13*(12), 6544. https://doi.org/10.3390/su13126544

- Lalithchandraa, B. N., & Rajendhiran, N. (2021). Liquidity Ratio: An Important Financial Metrics. *Turkish Journal of Computer and Mathematics Education*, *12*(2), 1113-1114. https://doi.org/10.17762/turcomat.v12i2.1129
- Lyaskovskaya, E., & Khudyakova, T. (2021). Sharing Economy: For or against Sustainable Development. Sustainability, 13(19), 11056. https://doi.org/10.3390/ su131911056
- Mathews, M., Daud, S. N., & Gill, D. K. (2021). The Relationship between Liquidity Ratios and EPS. International Journal of Academic Research in Business and Social Sciences, 11(8), 1450–1457. http://dx.doi.org/10.6007/IJARBSS/v11-i8/10841
- Ministry of the Interior of the Slovak Republic. (2023). *Total number of registered vehicles in Slovakia.* Ministry of the Interior. www.minv.sk/?celkovy-pocet-evidovanychvozidiel-v-sr
- Ministry of Transport, Construction and Regional Development of the Slovak Republic. (2016). *Strategic plan for the development of transport in the Slovak Republic by* 2030 – Phase II. Ministry of Transport, Construction and Regional Development. https://www.mindop.sk/ministerstvo-1/doprava-3/strategia/strategicky-planrozvoja-dopravy-sr-do-roku-2030
- Mura, L., Zsigmond, T., & Machova, R. (2021). The effects of emotional intelligence and ethics of SME employees on knowledge sharing in Central-European countries. *Oeconomia Copernicana*, *12*(4), 907–934. https://doi.org/10.24136/oc.2021.030
- Pap, J., Mako, C., & Miklos, I. (2021). High-Growth Platform in the Delivery Economy (WOLT – The Hungarian Case). SSRN Electronic Journal. http://dx.doi.org/ 10.2139/ssrn.3909294
- Perkumiene, D., Vienazindiene, M., & Svagzdiene, B. (2021). The Sharing Economy towards Sustainable Tourism: An Example of an Online Transport-sharing Platform. *Sustainability*, *13*(19), 109555. https://doi.org/10.3390/su131910955
- Popescu, G. H., & Ciurlău, F.C. (2019). Making Decisions in Collaborative Consumption: Digital Trust and Reputation Systems in the Sharing Economy. Journal of Self-Governance and Management Economics, 7(1), 7–12. https://doi.org/10.22381/ JSME7120191
- Popescu, K. C., & Olah, J. (2020). Use of the Bland-Altman plot for graphical demonstration of results in the sharing economy. *Ekonomicko-manazerske spektrum*, *14*(2), 90-99. https://doi.org/10.26552/ems.2020.2.90-99
- Pouri, M. J., & Hilty, L. M. (2021). The digital sharing economy: A confluence of technical and social sharing. *Environmental Innovation and Societal Transitions*, 38, 127-139. https://doi.org/10.1016/j.eist.2020.12.003
- Register of Financial Statements. (2023a). *Individual Financial Statements of Bolt Services SK.* Registeruz SK. https://www.registeruz.sk/cruz-public/dmain/ accountingentity/show/1825290
- Register of Financial Statements. (2023b). *Individual Financial Statements of Wolt Slovakia*. Registeruz SK. https://www.registeruz.sk/cruz-public/domain/accountingentity/show/1854119
- Soltysova, Z., & Modrak, V. (2020). Challenges of the Sharing Economy for SMEs: A Literature Review. *Sustainability*, *12*(16), 6504. https://doi.org/10.3390/ su12166504
- Stone, B. (2017). *The Upstarts: How Uber, Airbnb, and the Killer Companies of the New Silicon Valley Are Changing the World.* Little, Brown and Company.
- Suchanek, M., Jagiello, A., Wolek, M. (2019). Transport Behaviour in the Context of Shared Mobility. In M. Suchanek (Ed.), *Challenges of Urban Mobility, Transport Companies* and Systems. TranSopot 2018 (pp. 149-158). Springer Proceedings in Business and Economics. Springer. https://doi.org/10.1007/978-3-030-17743-0\_13
- Tai, T. D. (2022). Impact of corporate social responsibility on social and economic sustainability. *Economic Research-Ekonomska Istraživanja*, 35(1), 6085–6104. https://doi.org/10.1080/1331677X.2022.2046480
- Tamuluviciene, D. (2016). Methodology of complex analysis of companies' profitability. *Entrepreneurship and Sustainability Issues*, 4(1), 53-63. https://doi.org/10.9770/ jesi.2016.4.1(5)

- Tham, W. K., Lim, W. M., & Vieceli, J. (2022). Foundations of consumption and production in the sharing economy. *Electronic Commerce Research, 23,* 2979–3002. https:// doi.org/10.1007/s10660-022-09593-1
- Vichova, K., Veselik, P., Heinzova, R., & Dvoracek, R. (2021). Road Transport and Its Impact on Air Pollution during the COVID-19 Pandemic. *Sustainability*, *13*(21), 11803. https://doi.org/10.3390/su132111803
- Vinod, P. P., & Sharma, D. (2021). COVID-19 Impact on the Sharing Economy Post-Pandemic. Australasian Accounting, Business and Finance Journal, 15(1), 37-50. http://dx.doi.org/10.14453/aabfj.v15i1.4
- Wolt Enterprises Oy. (2023). *Financial informations of Wolt Enterprises Oy.* Finder. https://www.finder.fi/ITkonsultointi+ITpalvelut/Wolt+Enterprises+Oy/Helsinki/yhteystiedot/3036929?ref=redirect
- Wolt for restaurants. (2023). *Reach new customers and get more orders with Wolt*. Wolt. https://explore.wolt.com/sk/svk/merchants
- Wynn, M., & Jones, P. (2022). Digital Technology Deployment and the Circular Economy. *Sustainability*, 14(15), 9077. https://doi.org/10.3390/su14159077

© 2023 Author(s). This is an open-access article licensed under the Creative Commons Attribution-NonCommercial-NoDerivs License (http://creativecommons.org/licenses/by-nc-nd/4.0/).