CUSTOMERS ATTITUDES TOWARD THE USE OF SHARING ECONOMY OF PUBLIC TRANSPORT SERVICES

Kovač, Barbara

University of Zagreb

Faculty of Economics and Business

Master Degree in Business, Trade and International Business

CUSTOMERS ATTITUDES TOWARD THE USE OF SHARING ECONOMY OF PUBLIC TRANSPORT SERVICES

Master thesis

Barbara Kovač

Zagreb, July 2022

University of Zagreb

Faculty of Economics and Business

Master Degree in Business, Trade and International Business

CUSTOMERS ATTITUDES TOWARD THE USE OF SHARING ECONOMY OF PUBLIC TRANSPORT SERVICES

Master thesis

Student: Barbara Kovač, 0067575560
Mentor: Associate Professor Dora Naletina, PhD

Zagreb, July 2022

SVEUČILIŠTE U ZAGREBU
Ekonomski fakultet
ZAGREB - HRVATSKA

UNIVERSITY OF ZAGREB
Faculty of Economics & Business
ZAGREB - CROATIA

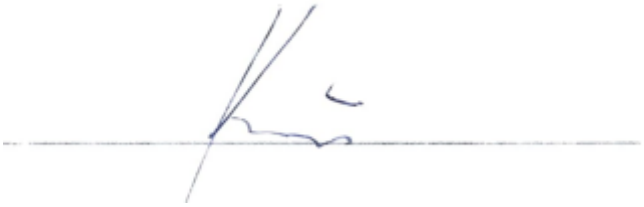
STATEMENT ON THE ACADEMIC INTEGRITY

I hereby declare and confirm by my signature that the maste thesis is the sole result of my own work based on my research and relies on the published literature, as shown in the listed notes and bibliography.

I declare that no part of the master thesis has been written in an unauthorized manner, i.e., it is not transcribed from the non-cited work, and that no part of the work infringes any of the copyrights.

I also declare that no part of the master thesis has been used for any other work in any other higher education, scientific or educational institution.

(Place and date)



(Personal signature of the student)

CONTENT

SUMMARY

Numerous indicators show that the sharing economy in public transport, with the help of its strong flexibility as a market model, has adapted extremely well to the economic crisis caused by the COVID-19 pandemic. Consequently, this master thesis investigated the attitudes of users in the Republic of Croatia when it comes to the sharing economy as a business model used in public transport during the COVID-19 pandemic. From the obtained results of the conducted empirical research, it can be concluded that the respondents are familiar with the concept of the sharing economy. It is also evident that they are aware of more favorable prices related to the business model of the sharing economy in public transport. They consider these lower prices to be a distinct advantage of this business model. The empirical research conducted in the Republic of Croatia shows that the respondents prefer to use digital platforms of the sharing economy in transport compared to conventional forms of public transport. The results of the conducted research indicate that respondents are aware of the advantages of ordering and paying for rides through digital platforms of the sharing economy in public transport. The analysis of the results of the empirical research clearly points that the respondents will not stop using public transport companies that use the business model of digital platforms of the sharing economy (Uber, Bolt) and that they will not switch to conventional forms of public transport, since conventional forms of public transport pollute the environment less with carbon dioxide emissions. The conducted empirical research indicates the uncertainty of the use of public transport after the COVID-19 pandemic.

Keywords: *sharing economy, public transport, COVID-19 pandemic, The Republic of Croatia.*

SAŽETAK

Brojni pokazatelji potvrđuju da se ekonomija dijeljenja u javnom prijevozu, uz pomoć svoje snažne fleksibilnosti kao tržišni model, iznimno dobro prilagodila gospodarskoj krizi uzrokovanoj pandemijom COVID-19. Slijedom toga, u ovom diplomskom radu istraženi su stavovi korisnika u Republici Hrvatskoj vezano uz ekonomiju dijeljenja kao poslovni model korišten u javnom prijevozu tijekom pandemije COVID-19. Iz dobivenih rezultata provedenog empirijskog istraživanja može se zaključiti da su ispitanici općenito dobro upoznati s konceptom ekonomije dijeljenja. Također je vidljivo da su svjesni povoljnijih cijena vezanih uz poslovni model ekonomije dijeljenja u javnom prijevozu. Ispitanici niže cijene smatraju izrazitom prednošću ovog poslovnog modela. Empirijsko istraživanje provedeno u Republici Hrvatskoj pokazalo je da ispitanici radije koriste digitalne platforme ekonomije dijeljenja u prometu u odnosu na konvencionalne oblike javnog prijevoza. Rezultati provedenog istraživanja također pokazuju da su ispitanici upoznati s prednostima naručivanja i plaćanja vožnji putem digitalnih platformi ekonomije dijeljenja u javnom prijevozu. Analiza rezultata empirijskog istraživanja jasno ukazuje na to da ispitanici neće prestati koristiti prijevoznike koji koriste poslovni model digitalnih platformi ekonomije dijeljenja (Uber, Bolt) te da neće prijeći na konvencionalne oblike javnog prijevoza budući da konvencionalni oblici javnog prijevoza manje zagađuju okoliš emisijom ugljičnog dioksida. Rezultati provedenog empirijskog istraživanja isto tako upućuju na neizvjesnost korištenja javnog prijevoza nakon pandemije COVID-19

Ključne riječi: *ekonomija dijeljenja, javni prijevoz, COVID-19 pandemija, Republika Hrvatska*

1. INTRODUCTION

1.1. The subject of the research

The development of information and communication technology has greatly changed the world. Its development has, among other things, strongly contributed to the emergence of new paradigms, and one of them is certainly the sharing economy. In the literature, there are various definitions as well as conflicting approaches when it comes to the economy of sharing. Nevertheless, it is clear that this is a market model based on sharing, exchange and lending from user to user (peer-2-peer), and it is done mainly through different platforms, whether in the form of mobile applications or websites. The sharing economy is most often associated with the use of platforms that are operated by Airbnb and Uber for short-term rental or use in the means of transportation. Only a superficial analysis shows that the sharing economy has become an extremely attractive and engaging business or market model when it comes to public transport. There are numerous motives for participating in sharing economy such as cost savings, time savings, convenience, and social value. Some authors pointed that practice of using sharing economy in traffic will ensure the reduction of traffic as cars will be used more efficiently. Numerous indications point out that the sharing economy in public transport, with the help of its strong flexibility as a market model has adapted extremely well to the economic crisis caused by the COVID-19 pandemic. The goal of this paper is to investigate the attitudes of customers in the Republic of Croatia when it comes to the use of public transport regarding sharing economy during the economic crisis caused by the COVID-19 pandemic.

1.2. The goals and methods/data

Apart from secondary data, also primary data are gathered in order to fulfill the defined goal. In primary research, a questionnaire method are implemented as an instrument. The methods for data collection for the purposes of this paper are based on analytical, planned and systematic collection of foreign and domestic literature and on the scientific and professional interpretation of quantitative and qualitative data by recent authors.

Primary research is conducted on a purposive sample of 320 respondents. The questionnaire is built on questions from prior studies that focused on similar issues. The empirical part of the paper is based on primary data obtained from research in the Republic of Croatia using a survey questionnaire, which was created in the Google Forms tool. The obtained research results were fundamentally analyzed using the Statistica Tibco 14.0 software package.

The research results were analyzed and interpreted using descriptive and modern statistical methods. When making his own conclusions, the author primarily used inductive and deductive methods. Given the worldwide epidemic, interpretation of the data analysis will also provide overview of the characteristic of sharing economy in public transportation, leading to a better knowledge and future possible growth.

1.3. Structure of the paper

This paper consists out of 5 chapters.

The first chapter provides a brief overview of the thesis' content and organization, as well as an explanation of the paper's subject and aim, data sources, and gathering techniques.

Second chapter gives a definition of sharing economy and public transport in general and defines significance and importance of public transport in modern society during the pandemic. In the next chapter, it is explained how regulatroy framework functions regarding sharing economy in the EU and Croatia.

Fourth chapter is important because we provided the review of our existing research, methods that we used and in the end results.

Final chapter is the conclusion.

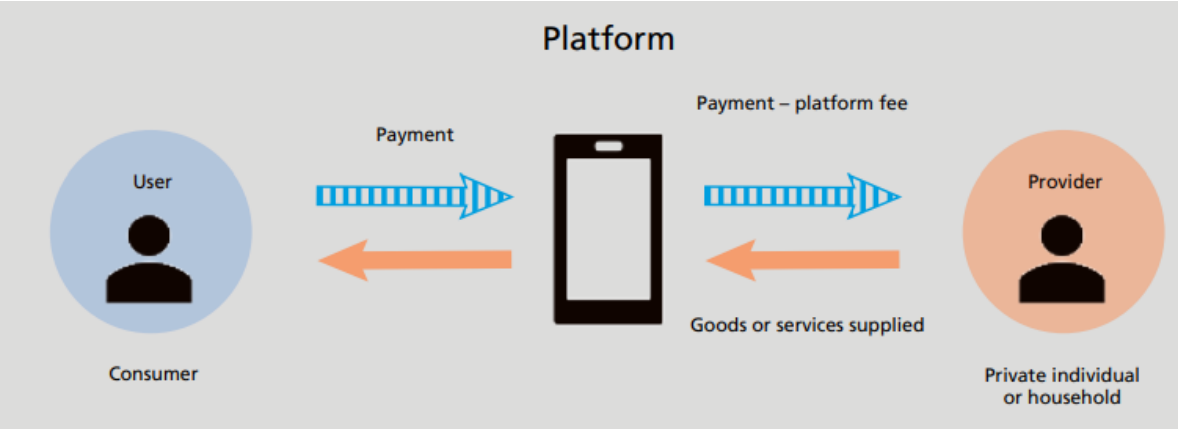
2. ECONOMICS OF SHARING IN PUBLIC TRANSPORT

2.1. Theoretical approach of Sharing Economy

It was understood quite a long time ago that it is necessary to change existing business practices (paradigms) and design new ones in order to ensure development and often thus ensure survival itself. One of the newer business paradigms is the sharing economy, which was understood quite early on that it could to be a success, which is not difficult to prove today (Botsman and Rogers, 2010). In the literature, as in most cases, we encounter different scientific approaches when it comes to what is described as the sharing economy, and as a result, different terms are used in scientific circles, and therefore different definitions of this market and business model. There exists great semantic confusion within academic literature surrounding the term *"sharing economy"* (Curtis and Lehner, 2019).

The term sharing economy itself appeared for the first time in 2008 (Puschmann and Alt, 2016). But in addition to the economy sharing for this market model, we encounter terms such as: *"access-based consumption"* (Frechette, 2016), *"collaborative economy"* (Botsman, 2013), *"peer-to-peer economy"* (Belk, 2014), etc. So it is about the diversity of consumption based on access (and not on ownership). Bradhi and Eckhardt (2012) defined the sharing economy quite a long time ago as an understanding of the access-based nature of consumption. The sharing economy, which refers to peer-to-peer markets generally, has developed as a substitute provider of products and services that are often offered by well-established industries. (Zervas et al., 2017).

Chart 1. Peer-to-peer business model of the sharing economy



Source: Basselier et al., *The rise of sharing economy* (2018).

These authors believe that the mentioned type of consumption can be defined through six dimensions. The authors hold that the sharing economy is characterized by: temporality, anonymity, market

intermediation, consumer involvement, different types of object accessed and political consumerism. Namely, the mentioned authors researching the car sharing approach come to the conclusion that there are several outcomes of consumption. Consumers do not experience perceived ownership and avoid identification with the object that is the object of consumption. Anonymity is highly valued, sharing facilities with strangers leads to many experiences.

It is important to note that limited access to the object and market intermediation prevent the development of appropriation practices. It is quite unquestionable that when it comes to the business model that is most often called the sharing economy, it is a market model based on sharing, exchange and lending from user to user (peer-2-peer), and this is mainly done through different platforms, either in the form of mobile applications or websites (Gobble, 2017). In this sense, the European Commission also defines the sharing economy as a business model that is used on different platforms to improve the functioning of an open market where temporary use of products and services is offered, often by private individuals. When it comes to the aforementioned online and other platforms, it is clear that risk cannot be completely eliminated in online sharing economy platforms. However, it is necessary to provide various mechanisms to reduce the uncertainty of transactions. Namely, it is important to find a way to bridge the gap between two prominent aspects of the sharing economy, namely the product and personal reputation (Abrate and Viglia 2019). Ownership changes related to this business model are not a limitation for its successful functioning (European Commission, 2016).

It is quite clear that it is an economic model that bases its existence not on ownership but on access to products or services through sharing, renting, exchanging and selling. Of course, the emergence of such an economic model is possible thanks to the development of information and communication technology (ICT), primarily the Internet, smartphones and, above all, digital platforms of the sharing economy. Among many authors, we will mention the author Botsman (2013), who defines the sharing economy as an economic model based on the sharing of underutilized assets, whether it is a service, space or something else in exchange for compensation, whether monetary or non-monetary. Today, it is quite difficult to estimate the size of the sharing economy market, since different definitions of the sharing economy fundamentally change the calculation methodology itself. And this again affects the inclusion or exclusion of individual companies in the sharing economy market itself. Despite this, consulting firm PwC (2016) estimated that in 2015 in Europe, companies generated income from the sharing economy in the amount of around four billion euros. The same consultancy estimates that the world market of the sharing economy could cost to US$ 335 billion by 2025. Such an optimistic assessment of the growth of this market could first of all be understood based on the results of a survey

conducted in the USA in 2015. After analyzing the results of the aforementioned research, it is not difficult to understand the great optimism in the development of the sharing economy market. Namely, the results indicate that the main motives for participating in the sharing economy (for both service providers and service users) are: saving money, a fairly simple way to earn extra money, protecting the environment, and creating a stronger community (Smith, 2016). In the future, we can expect the appearance of an increasing number of platforms as well as business models that will combine supply and demand, which can have a positive effect on the further growth of the sharing economy (Brozović et al., 2019).

Scientists have basically explored the meaning and possible importance of the sharing economy on the overall economy. Consequently, Sundararajan defined five key determinants that characterize the sharing economy (Sundararajan, 2016). According to the mentioned author, the sharing economy can increase the total consumption since it contributes to the construction of the market, which enables the exchange of products and the development of completely new services. The sharing economy increases the efficiency of the use of capital, since it increases the utilization of assets. Furthermore, the same author states that the sharing economy fundamentally changes the sources of capital investment. Namely, capital is invested by a network of individuals and not by large corporations or states. Also, the sharing economy erases the boundaries between personal (private) and professional relationships, since this business model enables various transactions, such as lending money between strangers, which is often considered a personal matter. And at the end, the aforementioned author concludes that the sharing economy erases the previous boundaries between permanent work status and temporary work, as well as the boundaries between employee status and independent work status. In this sense, the European Commission (2016) mentions the economy of cooperation, detailing the categories of collaborators (service providers, service users and intermediaries) that exist in the functioning of this business model. Service providers are those collaborators (private individuals or companies) who share goods (resources, time). Service users are the group that uses the offered goods. Intermediaries represent a group of collaborators in this business model who use Internet channels to connect service providers and service users, providing them with platforms for cooperation, in order to facilitate and speed up mutual transactions.

Theoreticians as well as practitioners have been intensively studying the sharing economy for the past ten years. In this sense, one of the largest practitioners, the consulting firm PwC (2016), prepared a study on the sharing economy for the needs of the European Commission. The aforementioned

consulting company believes that the activities affected by the sharing economy span almost five economic sectors:

- The first sector is related to transportation services (peer-to-peer transportation). This primarily refers to the activity of the sharing economy practiced by transport companies (Uber, Lyft, BlaBlaCar, etc.).
- The second sector of the sharing economy extends to the area of accommodation services (peer-to-peer accommodation). Namely, it is about renting out own vacation homes or free space in residential houses and apartments. For this purpose, various platforms are most often used for renting (Airbnb), housing exchange (LoveHomeSwap), etc.
- The third sector of the sharing economy is related to on-demand professional services. It is about connecting experts (service providers) and those who need services (individuals or companies). Most often, it is about services in the field of accounting, administration or consulting services of various types.
- The fourth area of operation of the sharing economy includes on-demand household services. It is about housekeeping services, food delivery and any other service related to household help.
- The fifth sector of the sharing economy is related to collaborative finance. And it is about the use of different internet platforms with the aim of mutual investment of financial resources between legal and natural persons. Basically, when it comes to this activity of the sharing economy in the financial sector, there are various online funding (investment) platforms through which investors invest money mainly in small private companies. Of course, there are also those online platforms that exclusively serve to lend money (PwC, 2016).

Theorists most often group the areas of operation of the sharing economy into four categories. Thus, Professor Schor (2016) believes that the first category of the sharing economy, and at the same time the one where the sharing economy was most likely conceived, would be the market where goods circulate. The best example of this category is the business model on which eBay is based. The second category of the sharing economy is characterized by the optimal use of durable goods (real estate and movable property). This category also includes various platforms on which the sharing economy rests, when it comes to renting real estate (Airbnb) or moving goods (Uber). The third category of the sharing economy includes the exchange of services. While the fourth category is the sharing of assets, primarily those that are used for work and less for consumption. Various advantages and disadvantages

of the sharing economy are analyzed in the literature (Manyika et al., 2016). Accordingly, PwC (2017) lists the following advantages and disadvantages of the sharing economy.

The advantages of the sharing economy:

1. Favorable prices - enable greater purchasing power and a stronger material status of consumers, thus representing the most prominent advantage of the sharing economy,
2. Flexibility of working hours - a very important aspect of today's lifestyle, which enables employees to earn additional income,
3. Use of unused capacities and stimulation of new consumption – provides the possibility of cost rationalization of private property,
4. Creating a mechanism of trust between the user and the executor, the quality assessment system of the provided service or product enables the creation of trust.

The disadvantages of the sharing economy:

1. Instability of personal income - sharing economy platforms offer many benefits for users but often not for service providers.
2. Lower level of worker protection - individuals who offer services through the sharing economy platform are not in the role of employees and therefore do not enjoy the same rights as them.
3. Professional training and education - sharing economy platforms enable additional income only if an individual has assets that can be used, and skills that are necessary to perform services.
4. Issues of privacy and security of user data - Companies that are involved in the sharing economy must collect data about users in order to be able to connect users with service providers in a reliable way. With numerous examples of abuse and insufficient security of user data, it is necessary to take into account the risk.
5. Access to sharing economy platforms - it is necessary to have access to the Internet, own a smart phone and know how to use technology.

A fundamental question related to the rapid growth of the sharing economy in the last few years before the COVID-19 pandemic is self-evident. Such rapid growth of the sharing economy is often attributed to the fact that it is an existing capacity that is underutilized. However, Böcker and Meelen (2016) believe that the diversity of motivations that drive participants to participate in the sharing economy is also important for the rapid growth of different forms of the sharing economy. The authors cite an example of a sharing economy such as peer-to-peer car sharing, stating that it is about providing not

only direct economic benefits, but also social benefits to the participants of this form of sharing economy.

2.2. Definition in terms of public transport

Today's lifestyle, both private and business, is characterized by the constant spatial mobility of people, and thus the need for demand for different types of transportation. First of all, this leads to the increasing importance and meaning of public transport in cities. Public transportation includes city buses, trolleybuses, trams and passenger trains, subway rapid transit and ferries, as well as other transportation services. When it comes to public transport between cities, air transport, buses and intercity railways are mostly used (Naletina et al., 2020). Socio-economic changes in society have an important impact on functioning of public transport (Kral et al., 2018). Public transport represents transport that is available under the same conditions to all users of transport services (Brčić and Ševrović, 2012). It is important to note that public passenger transport is a very important form of transport, especially in large cities, and is characterized above all by its frequency, flexibility, distance between its stations and prices (Vičević and Hess 2013). The provision of public road transportation services in the Republic of Croatia in 2016 realised a revenue of 1.8 billion kuna (Ivandić and Vidović, 2020).

A large number of the world's metropolises have well-structured high-quality public transport systems that largely succeed in meeting the demand for transport (Schmöcker et al., 2010). However, the same authors state that London, as one of the largest metropolises in the world, has reached its maximum capacity when it comes to roads and public transport services. However, such a situation characterizes not only the British capital, but also other large cities in the world (Tokyo, Hong Kong, etc.). When it comes to public transport in the city of Zagreb, it is characterized by too much crowding, transit is often late, and the vehicle fleet is considered old. Research conducted in Zagreb points to positive aspects of public transport that contribute to user satisfaction. This is primarily about the price of the service. Therefore, there is still enough room for progress in terms of public transport in Zagreb, and service providers expect that the transport policy will bring good results (Naletina et al., 2019).

Over the past 20 years, Mulley and Nelson (2009) have recognized that on-demand transportation complements or replaces traditional transportation in low-servicing areas (typically through taxis or tiny, low-floor buses). It is a generally accepted fact that good public transport has a positive effect on the competitiveness of the economy to a large extent and undoubtedly represents an important link for the establishment of economic connectivity. Of course, economic prosperity is unthinkable without public transport. Public transport is very important for every social community since it ensures

relatively cheap and fast mobility of the population. Public transport companies are reliable and their services are affordable, as they are characterized by many years of business experience (Stelzer et al., 2015). In the literature, we encounter recommendations that the technical and functional aspects of the provision of public transport services should be taken into account, since the quality of the provided services is a multidimensional concept (Chica-Olmo et al., 2016). The mentioned group of authors determined that the following components are significant: reliability, responsibility, sensitivity, friendliness of the staff. Equally important are the attitudes and skills of all those involved in providing services. Research by the aforementioned authors also showed that safety, tangibility, simplicity, information system, frequency, prices, comfort and cleanliness are important. It is reasonable to assume that the meaning and importance of the mentioned components will grow every day since people's expectations are increasing every day and they are becoming more demanding in every segment. As a result of the above, there is no reason why this should not happen in public transport as well. In many cities, public transport companies face the problem of fare evasion, which is often considered an internal inefficiency of public transport companies. Studies focused on fare evasion in public transport were mainly conducted in Australia and Europe and were mainly focused on the psychological and motivational aspects of fare evasion (Barabino et al., 2020).

It is probably not necessary to emphasize the benefits of public transport in terms of reducing carbon dioxide emissions, since greater use of public transport reduces the use of private vehicles. Consequently, it is very important for the local community to find a way to properly meet the needs of citizens for public transportation, on the one hand. Without violating environmental protection on the other hand (Stjernborg and Mattisson, 2016). It is understandable that the need for public transport is increasing every day and that in this sense people are more and more demanding. Related to that, in the literature we find eight criteria that determine the quality of public passenger transport services (Trbušić, 2005).

The mentioned author states the following criteria that represent the basic determinants of the quality of public passenger transport services, which represent an important element in the user's decision when choosing the type of service:

1. availability, which refers to the scope of the service in terms of geography and time, but also their frequency,
2. accessibility, access to the public transport system, which includes access to another transportation,
3. informing, basic systematic information mediation about the public system transportation that enables travelers to plan and travel,

4. time, enabling time perspectives as a basis for planning and travel,
5. attitude towards passengers: the service strives to achieve the greatest possible compatibility between service standards and any other requirements of each user,
6. comfort: elements are introduced into public transport services that increase its comfort
7. security: personal security measures are introduced, resulting from the applied measures and activities, and they are designed in such a way that the traveler is aware of them,
8. impact on the environment: the effect on the natural environment as a result, resulting from the public passenger transportation.

The quality of the public passenger transport service is extremely important when choosing not only the type of service but also the frequency of its selection. Namely, sometimes the choice of a public transport service is conditioned by the necessity of its choice. The frequency of selection, the existence of the possibility to choose the public transport service of passengers represents the actual choice of the type of public transport service conditioned by the quality of the alternative public transport service. Public transport is becoming one of the most important subsystems in the entire industry. However, there are specific threats to the further development of this system, which are reflected in the continuous growth of the number of private vehicles and the lower quality of the provided transport service (Naletina et al., 2019). In the literature, we also find the research of the atmosphere in certain types of public transport and its influence on passenger satisfaction (Bissell, 2010). In the mentioned paper, the negative relationships that arise among public transport passengers are investigated in detail, as well as the influence of a complex set of different forces that encourage passengers to have different reactions, actions and behaviors.

2.3. Significance and importance of public transport in modern society during the pandemic

Today, it is completely clear that the Covid-19 crisis (pandemic) has shown everyone, and confirmed once again, the great importance and meaning of public transport when it comes to ensuring mobility from the aspect of its availability and continuity (UITP, 2020). Similar to other environments where individuals are in close proximity to others, it is reasonable to assume that public transportation may pose a risk of transmission of the COVID-19 virus. Of course, known mitigation measures (wearing face masks, social distancing and ventilation) will reduce this risk. It is clear that there are certain features of public transport that are different (dynamics of ventilation at different speeds, duration of exposure, duration of travel, etc.) from other activities when it comes to the risk of infection with the COVID-19 virus. Evidence from the early phase of the pandemic suggests, for example, that vehicle congestion and journey length also affect risk, so this could be used to identify particularly high-risk

services and potentially enable targeted interventions (Gartland et al., 2022). During the pandemic, the authorities urged people to avoid public transport, considering it as dangerous for the transmission of the virus as any other public place. However, today some believe that public transport, with appropriate measures, is COVID-19 safe. In other words, it was established that there is no evidence indicating that public transport was a critical place for the spread of the virus. Of course, this is not accidental, since public transport companies took measures in time to prevent the virus from spreading.

In contrast, it was found that cars were a trigger for the spread of the virus in some places (Ardila-Gomez, 2020). During the Covid-19 crisis, various aspects of public transport were investigated, including possible changes in user preferences regarding different forms of transport. The results of a survey carried out in Germany indicate that people used individual transport more. This is primarily about private cars, which was completely to be expected considering the fear caused by the COVID-19 pandemic, on the one hand, and on the other hand, the stigmatization of public transport associated with the same pandemic (Eisenmann et al., 2021). All of the above has had the effect that public transport as an economic activity in many countries has suffered major blows. Of course, the Covid-19 crisis has led to a change in consumer behavior when it comes to public transport. People have turned to less dangerous means of their mobility (bicycles, cars, etc.). Let's just mention the study done by Lock (2020) where he proved that there were more bicycles and individual cars on the road in Sydney during the COVID-19 pandemic, considering the stigmatization of public transport associated with the increased spread of the virus. Of course, the question is how many of those cyclists were directly connected to closed gyms. It is clear that it is quite demanding to maintain the attractiveness of public transport in the conditions of the COVID-19 pandemic, but also after it. Namely, despite the necessity of economic recovery after the pandemic, it is also unavoidable to preserve public health. It is clear that in such conditions, public transport is faced with special challenges, since it is a closed space and the danger that close contact can bring with it. Various studies have been done (Burns et al., 2020; Francetic and Munford, 2021) which suggest that the use of public transport may play a role in the spread of the virus. However, these studies did not prove that the transmission of the virus occurred in public transport.

At the very beginning of the pandemic, the crowds in public transport and the length of the journey could have influenced public transport to be recognized as a high-risk service for the spread of the COVID-19 pandemic. An analysis of almost all relevant studies published until 2021 related to the spread of the pandemic and related to the risk of transmission of the COVID-19 pandemic in public transport was made in 2022 by Gartland et al. (2022). The aforementioned analysis of relevant studies

so far indicates that, similar to other environments where an individual comes into close contact with others, public transport can be a risk of transmission of the COVID-19 virus. Studies conducted in France show that only 1.2% of sources of infection with the Covid-19 virus are related to transport (Pullano et al., 2021). Namely, the aforementioned studies show that infection with the Covid-19 virus in France mainly came from workplaces (24.9%), schools, universities (19.5%), health institutions (11%), temporary public and private events (11 %), and family gatherings (7%). Following the above, it is clear that numerous scientific studies as well as empirical analyzes show that public transport is associated with a significantly lower risk of the COVID-19 pandemic than other public places or private gatherings. However, despite this, public transport is often stigmatized without any real and solid argument. Many studies also show that public transport as a sector has taken appropriate measures to reduce the risks of the outbreak of the COVID-19 pandemic to an acceptable, manageable level that should be acceptable to users. With all this, it is clear that it is necessary to make continuous efforts to reduce the stigmatization of public transport related to the COVID-19 pandemic.

The public transport of the City of Zagreb is recording a fairly good recovery. Compared to 2020, the drop in city tram transport in the first half of 2021 was 12%, and for bus transport 15.33%. (Naletina, 2021). Although this is about a decrease in the use of public transport in Zagreb in 2021 compared to the previous year. This decrease is significantly smaller compared to the one that occurred in most European cities. It is not difficult to conclude that for the complete recovery of public transport in Zagreb, it is necessary to ensure the maximum possible safety related to the COVID-19 pandemic, in order to restore the confidence of passengers in itself. This is probably the only way of its real recovery as an economic branch that has been extremely strongly affected by this pandemic. Public transport is affected not only by the appearance of the COVID-19 pandemic itself and the change in people's behavior related to it, but also by the measures introduced by the governments of most countries. Now it is necessary to make people aware of the benefits of public transport for society and to restore citizens' trust in it. It is necessary to revise the existing public transport strategy in the Republic of Croatia as soon as possible. The public transport strategy in the Republic of Croatia should adopt, include and apply European standards for the prevention and detection of specific dangers as soon as possible, in order to ensure the safe mobility of people during crises. Since the Republic of Croatia is a tourist country, it is necessary to do everything in order to restore the trust of tourists, which would ensure a faster recovery not only of tourism but also of public transport as an economic sector (Naletina, 2021).

Public transport is a vital pillar for economic development in many countries, and its social and ecological aspects are of great importance both for the individual and for the whole community. Today's challenges, related to climate change, human health, safety, road infrastructure and connectivity, social inclusion, etc. are to a large extent related to public transport, either directly or indirectly. Public transport is crucial in many urban areas for their normal functioning. The emergence, but also the duration of the COVID-19 pandemic had a negative impact not only on public transport, but also on many other branches of the economy. Let's only mention tourism as an economic branch, since low-paid jobs in tourism are disproportionately affected by the COVID-19 crisis. All indicators point to the fact that the impact of tourism in countries with lower incomes will be disproportionately greater. In general understanding the effect of the Covid-19 pandemic on thesharing economy is essential (Hossain, 2021.). It is clear that the COVID-19 pandemic has fundamentally changed the tourism industry, and it is necessary to get out of this global tragedy by quickly transforming into sustainable tourism (Gössling et al., 2020).

2.4. The role of Sharing Economy in public transport

For a long time now, the whole world, and especially individual countries, have been trying in various ways to analyze in detail the impact of the sharing economy on public transport, and consequently also on the issue of its impact on sustainable development. Transport as an economic activity has grown strongly in the last twenty years and brought with it all the good and bad sides that are characterized by intense and rapid growth. The downsides are primarily related to environmental pollution, since almost everyone agrees that traffic as an economic activity is the biggest polluter of the environment. Estimates by the European Commission (2019) indicate that transport as an economic activity will continue to grow intensively in Europe. Namely, the aforementioned study predicts that passenger traffic will increase by 42% by 2050, while freight traffic will grow by almost 60%. It is a well-known fact that the large and unbalanced growth of traffic so far has led to a large number of negative impacts on human health and the environment.

Today, we are all witnesses of traffic jams and daily traffic congestion in and around big cities. As a result of the above, the question of further deterioration and even more possible negative impact of the use of shared means of transport (shared mobility), i.e. the possible negative impact of the sharing economy as a business model in public transport, arises. The reason for concern is very justified, since it is known that the car is generally the most used mode of transportation. Eurostat data (2020) indicate that in 2017, more than 70% of total trips were made by car. The same data indicate that public transport has grown significantly in the last twenty years (tram and metro +14.3%, railway + 6.2%,

maritime transport - 33.3%, bus - 23.7%). Unfortunately, public transport is still considered a far worse solution than using a car. The emergence of the COVID-19 pandemic has led to certain changes in people's habits regarding the use of public transport. The risk associated with the infection with the COVID-19 virus, the necessity of social distance, as well as isolation, have led to changes in people's previous habits when it comes to public transport, but to a greater use of shared mobility. Under these circumstances, it is understandable that people are more inclined to private transport and have greater confidence in it. It is also understandable to expect that ride sharing is a good choice to avoid infection with the COVID-19 virus, but also to avoid public transport, which is characterized by frequent congestion and the inability to maintain social distance (Andersson et al., 2020).

When it comes to the European Union, the area of shared mobility is part of what the European Commission defines in its agenda as part of the "cooperation and sharing economy" (2016). On the other hand, the academic community also tries to find the most important answers when it comes to the sharing economy as a business model in public transport. In the literature, we often encounter the term and concept of shared mobility. This concept is characterized by vehicle sharing, using different technologies (digital platforms) that connect the user and the service provider. It is important to note that with this vehicle sharing, access to the use of the vehicle and not ownership of it is important (Crozet et al., 2019). The concept of shared mobility represents short-term access to shared vehicles in accordance with the needs and conveniences of users (Machado et al., 2018). So, the business concept of the sharing economy in public transport is developing more and more every day with all its specificities. Especially in the last few years, car sharing became more popular. This is not surprising since there are several positive factors associated with car sharing. Car sharing makes it possible to reduce travel costs, reduce traffic jams, and reduce harmful gas emissions. The fact that in 2017, 2018 and 2019 (before the COVID-19 pandemic) various car sharing services were introduced in nearly 1000 cities worldwide speaks for itself (Phillips, 2019). The study indicates that in the world in 2019. 236 operators were present in the car sharing industry in 3128 cities and everything took place in 59 countries. The same study reveals that in 2017, 2018 and 2019, car sharing services grew by 47%. However, it is clear that during the COVID-19 pandemic, the use of private cars has increased significantly due to the strong recommendations of the authorities to maintain social distancing in order to reduce infection with the COVID-19 virus. The fundamental question is: How long will it take for the sharing industry to recover when it comes to public transportation?

Standing et al. (2018) state that the very concept of the sharing economy in public transport can take different forms, such as:

(a) buying services and paying for a ride (ride-sharing);
(b) service exchange (car-pooling);
(c) renting, the vehicle can be rented and not bought (car-sharing);
(d) loan, the vehicle can be borrowed (car-sharing);
(e) subscription, people can become members of a car sharing scheme (carsharing) and
(f) donation - people can drive for free in their vehicle (car-pooling).

Even a superficial analysis of the sharing economy in public transport, i.e. shared mobility, shows that it is about the joint use of different types of vehicles (cars, bicycles, etc.), which enables users to have short-term access to different modes of transport as their short-term needs would be met. It is about short-term access to different types of vehicles such as: traditional bicycles, cars, vans, scooters, etc. (Shaheen et al., 2015). In enormous urban areas carsharing is given by huge profit situated companies, fit for offering productive and adaptable administrations, utilizing the most trend setting innovations with exceptionally separated and customized costs (Rotaris and Daniels, 2018).

If carsharing is not meant to completely replace use of private vehicles with frequent usage of shared vehicles, it may encourage more people to walk, cycle, and use public transportation while decreasing the use of private vehicles (Mouratidis et al., 2021). When we talk about ride sharing, we first of all mean car sharing. The goal is to reduce traffic and costs by charging cars more efficiently. It's about filling the car as much as possible. The business model is that individuals can share rides for a certain fee, which the participants pay to the driver through the ride-sharing platform. Car sharing is also developing quite quickly in Europe. The results of study made by Moehlman (2015) regarding car sharing service and online community accommodation have showed that familiarity trust, cost savings and utility are essential. As already stated, several times in the paper, there are different modalities of car sharing from renting vehicles available for independent driving, to services provided by private car owners. These are transport services (Uber, Lyft, etc.), ride sharing (BlaBlaCar), etc. Different models of car sharing have been developed differently in European countries. In many countries of the European Union, such as Italy, Germany, Hungary, France, the Netherlands, extremely strict regulations governing the taxi industry make it almost impossible for car sharing, such as Uber's business model, while ride sharing is completely allowed (Lukasiewicz et al., 2022).

It is not difficult to conclude that it is extremely difficult to reach a satisfactory level of environmental protection and sustainability in public transport since there are different participants with significantly different interests. When it comes to the sharing economy in public transport, the Uber business model

should be highlighted, which has caused many conflicts between public transport participants and various controversies. Therefore, its operation in many countries is extremely difficult. The phenomenon of shared mobility is becoming more and more interesting, but also more complex, and as a result, various investigations are being conducted to shed light on all its possible aspects. A study "STARS" funded by the European Union (2018.) should also be mentioned here, which analyzed various aspects of most car-sharing services in Europe. The aforementioned study shows that the most diverse selection of car sharing services is available in Germany, as many as 155 of them. The mentioned study also indicates that countries such as Belgium, France, Italy, the Netherlands and the UK offer an extremely large number of cars sharing services (Rodenbach et al., 2018). Benjaafar et al. (2022) investigated ride sharing by analyzing vehicle ownership and usage costs in the context of using different sharing platforms and their impact on the cost of seat rental. The goal of their analysis was to determine the maximization of revenue or welfare using the ride-sharing business model. In their model, the aforementioned authors started from the assumption that the ratio of ownership and usage costs determines how ride sharing is organized. In case where ratio is low, ride sharing is offered as a peer-to-peer (P2P) service. Whereas in the event that the ratio is high, ride sharing is offered as a business-to-business (B2C) service. Above all, the results of their research are interesting, which show that ride sharing can lead to an increase in traffic even though it can reduce car ownership. The results of the same survey also indicate that turnover and ownership may increase as the cost of ownership increases. Things can be further complicated if revenue-maximizing platforms would prefer cases where cars are driven with only a few seats occupied, causing heavy traffic. The aforementioned research indicates that the sharing economy in public transport should be analyzed from different aspects in order to fundamentally understand all its advantages and disadvantages.

In their work, Böcker and Meelen (2016) analyze in detail the motives of participants in the sharing economy. The aforementioned authors made an intersectoral comparison of different sectors of the sharing economy. They determined that the dominant extrinsic motives of the sharing economy are the economic motivations of the sharing economy and related to the sharing of accommodation and car sharing. The same authors also determined that when it comes to the sharing economy related to sharing meals, tools and rides, intrinsic social and environmental motivations play an important role. It is completely clear that the motives of the participants of the sharing economy basically depend on the sector of the sharing economy. The new "sharing economy" (sharing bikes, cars, on-demand driving, etc.) is extremely interesting for the world's metropolises, which are facing rapid population growth and ever-increasing population density. For example, the economy of vehicle sharing affects the reduction of traffic within the city, its congestion and reduces pollution problems (Cohen and

Kietzmann, 2014). However, the real impact of sharing economy platforms on sustainability will remain a mystery for a long time to come, as sharing economy platforms are restrictive and selective in granting access to researchers (Frenken and Schor, 2017). Some of them (Airbnb) publish the results of their research themselves, which may imply bias and non-objectivity. There is a gap when it comes to theoretical, but also empirical knowledge of the real effect of sharing economy platforms on the sustainability of the environment. The combination of public and shared transport is necessary for clean and smart mobility (Kalašova et al., 2019).

3. REGULATORY FRAMEWORK OF THE SHARING ECONOMY

3.1. The EU's regulatory framework for the sharing economy

One of the first strategic documents of the European Commission that dealt with digitization is "*The Digital Single Market Strategy"* (2015). This strategy of the European Commission aimed to create a strategic framework for the single digital market of the European Union. The European Commission's idea regarding the aforementioned strategy was to allow all members the free movement of persons, services and capital so that everyone (individuals and companies) could independently and unhindered access and conduct online activities (COM 2015). The extremely rapid development of digital platforms created a necessary need for the rapid creation of a new regulatory framework. Already in 2016, the European Commission, in its document *"European Agenda for the Collaborative Economy"*, tried to shed light on the economic and regulatory frameworks for the P2P economy. Namely, the European Commission has started monitoring prices, but also analyzing various obstacles in individual countries, which were primarily created on the basis of national regulations. As a result, the European Commission decided on periodic surveys of both consumers and companies regarding the use and application of the collaborative economy in their business. It was also decided, among other things, to assess the development of the cooperation economy twice a year and to identify the good practices of that market in each case. The idea of the European Commission related to this issue had, among other things, the goal of creating a market framework in which fair competition would be ensured while providing consumers with a high level of online services, regardless of their place of residence and nationality, but with the protection of their personal data. With this, the European Commission actually tried to create a healthy regulatory framework for the digital economy within the European Union. In this way, an effort was made to insist even stronger on sustainable development through the promotion of business models based on internet or digital platforms (COM 2016).

Over the past few years, the European Commission has adopted a series of documents (Digital Single Market for All, COM 2017; Creating a Common European Data Space, COM 2018; etc.) that aimed to provide a regulatory framework for the functioning of digital platforms of the sharing economy. The very appearance of Internet platforms for the sharing economy surprised many countries that had to arrange the regulatory framework for their sharing. With regard to the growth of a sharing economy, there must be an issue that Europe will yet again confirm less adept at capturing the benefits of digitalization (Munkoe, 2017). In many countries around the world, the business volume of online platforms for the sharing economy is continuously growing almost exponentially. Consequently, the need to regulate them becomes more and more necessary, as there is increasingly unfair competition

between sharing economy platforms and traditional operators in sectors such as tourism, hospitality, etc. Paradoxically, many countries have regulated in detail certain sectors such as: transportation, medicines, food, buildings. It is important to point out that the issue of Internet platforms for the sharing economy in many important aspects is not fully regulated in most countries. It is a well-known fact that before the new product is allowed to enter the market, it is analyzed in detail from various aspects, and in particular, its regulatory framework is thoroughly regulated. While, on the other hand, the entry of Internet platforms for the sharing economy in certain countries is extremely easy and even spontaneous. It is about sharing economy platforms coming to individual markets without consultation and as a result of ad hoc decisions by individual governments (Frenken and Schor, 2017).

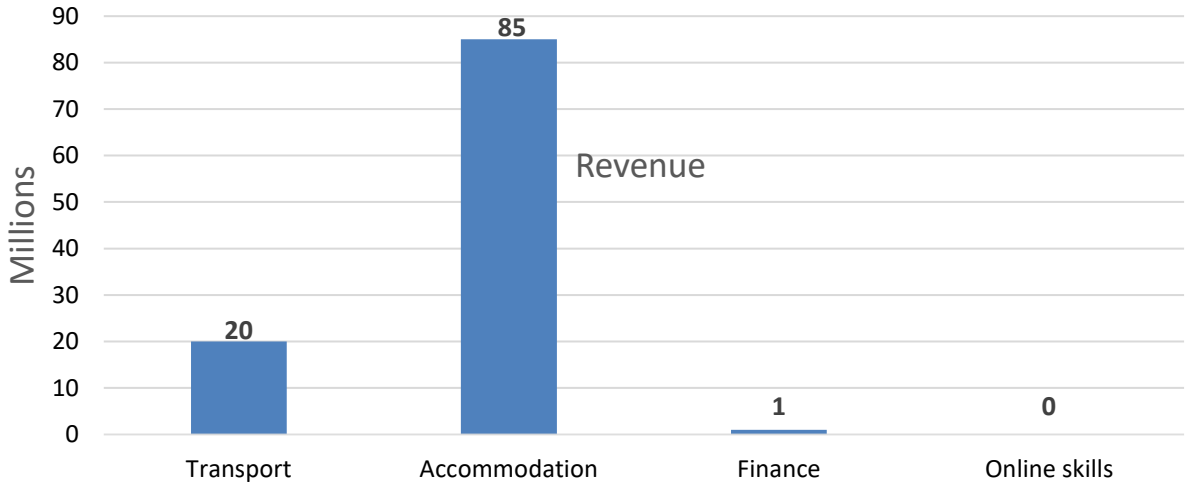
3.2. Croatia's sharing economy regulatory framework

The very aggressive entry into various national and local markets in the field of transportation by companies that use internet platforms of the sharing economy as their business model has caused real confusion and disruption in these markets. On the one hand, they surprised their competitors, who do not use Internet platforms of the sharing economy on national and local markets, with their rapid market success. And that market success is based primarily on their efficient and effective business (Uber), which enables the offer of significantly lower driving prices compared to classic taxi companies. While, on the other hand, companies that use Internet platforms of the sharing economy have brought the local tax system into trouble, primarily due to the vague regulatory framework. Namely, at the very beginning of the arrival of companies, which use Internet platforms of the sharing economy in the field of transportation, to local markets, their regulatory framework was completely undefined and sketchy. In the Republic of Croatia, as in most other countries, many legal issues related to the participants in the business of companies that use Internet platforms of the sharing economy are not regulated in detail. Their operations are largely regulated in the same way as if they used conventional business models.

In 2018, the Croatian Parliament adopted amendments to the Road Transport Act (Official Gazette No. 41/2018). With these amendments to the Road Transport Act, the possibility of providing taxi services, i.e. transportation that can be ordered via the Internet or digital platform, has practically been legally created. However, there is still a sectoral approach when it comes to providing services via digital platforms. The Croatian parliament adopted these amendments to the law on road transport following the decisions of the European Court of Justice in several cases (Uber Belgium BVA v. Taxi Radio Bruxellois NV; Elite Taxi v. Uber Systems Spain, etc.). Under this legal framework, Uber drivers are also considered taxi drivers, and their work must comply with the regulations governing taxi services.

The public in Croatia did not understand that this was a new or parallel labor market for quite a long time. Here, the sharing economy represents a special business model in which the employment relationship is not regulated by any form of contractual employment relationship. On the contrary, it is about mediating the internet or digital platform between the recipient and the service provider. Of course, there are many legal aspects of this relationship that are not clearly legally regulated in the most developed countries, including in the Republic of Croatia. In the Republic of Croatia, there is no special legal regulation that refers to internet or digital platforms or the sharing economy in the broadest sense of the word. Generally speaking, there is no specific definition of the cooperative economy in the Croatian legal framework (Dumančić and Čeh Časni, 2021). The European Commission (2018) in its research *"Study to Monitor the Economic Development of the Collaborative Economy at sector level in the 28 EU Member States. Final Report"* determined that in 2016 there were eight companies in Croatia whose business model was using of internet platforms of the sharing economy, and they operated in the transport, accommodation rental and finance sectors. The same source estimates their current market at around 106 million euros. It is understandable that at that time in Croatia the transport sector had the most platforms. In the transport sector, two international companies (Uber, BlaBlaCar) operated on the principle of the P2P transaction model (P2P transaction model), as well as one domestic company (Spin City) which uses a B2B structure in its operations. According to this study, in 2016, the most significant and influential branch of the economy in the Republic of Croatia, when it comes to companies that use internet platforms of the sharing economy, is certainly transport. It is about 1,528 jobs and a total income of 19.8 million euros.

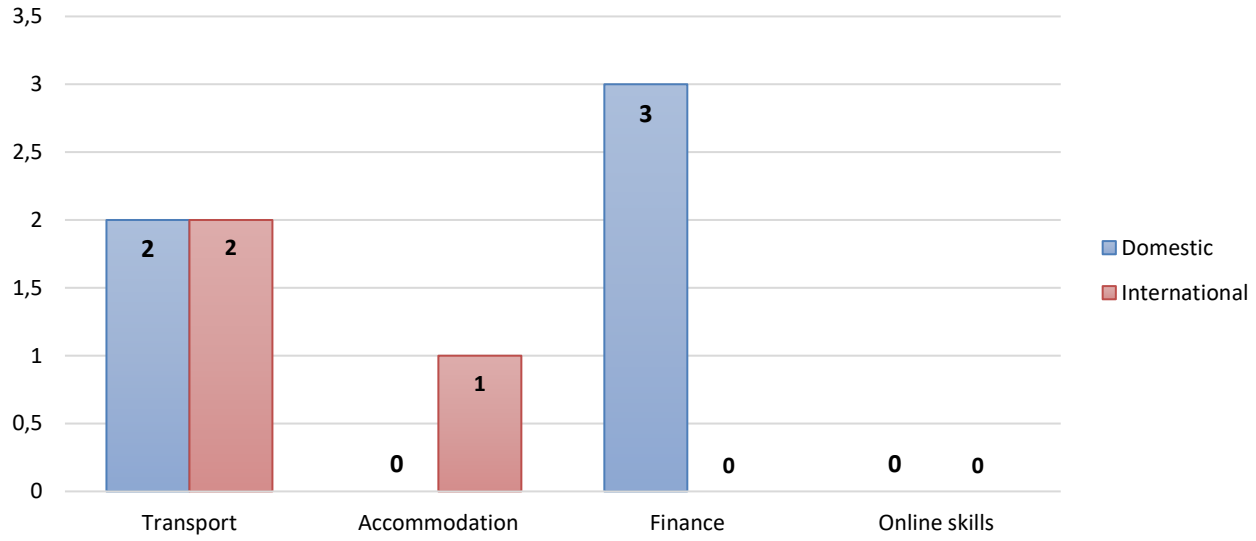
Graph 1. Revenue of platforms of the sharing economy in the Republic of Croatia in 2016



Source: European Commission (2018). Study to Monitor the Economic Development of the Collaborative Economy at sector level in the 28 EU Member States. Final Report.

In the aforementioned structure, Uber plays a dominant role, taking into account the fact that for 35% of drivers in the Republic of Croatia, it is the only source, while for 64% of drivers, Uber provides an additional source of income. It is clear that it is not necessary to further elaborate on the mentioned indicators, since they speak for themselves about the importance of Uber as the most important Internet platform of the sharing economy in the Republic of Croatia. How important Croatia is to Uber is shown by the fact that only in the Republic of Croatia, Uber has expanded from road transport to maritime transport (UberBOAT) and where the aforementioned company offers this service all year round.

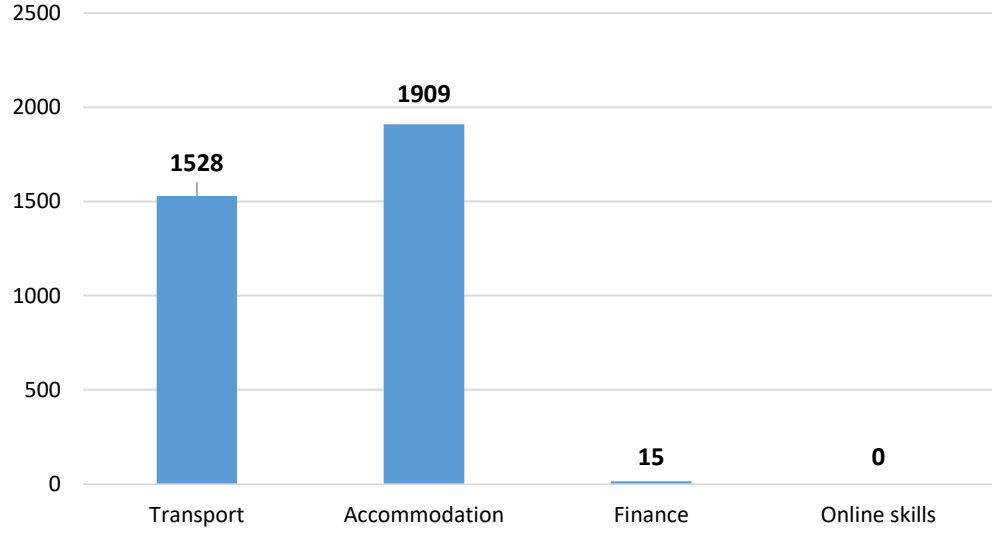
Graph 2. Number of platforms in the Republic of Croatia in 2016



Source: European Commission (2018). Study to Monitor the Economic Development of the Collaborative Economy at sector level in the 28 EU Member States. Final Report.

When it comes to the collaborative accommodation sector, it is dominated by the international company Airbnb using the P2P transaction model. Since the Republic of Croatia is a tourist country, the cooperative accommodation sector represents an extremely important part of tourism as an economic branch, and in 2016 the total revenue was almost 85 million euros (European Commission, 2018).

Graph 3. Number of employees in the Republic of Croatia in 2016



Source: European Commission (2018). Study to Monitor the Economic Development of the Collaborative Economy at sector level in the 28 EU Member States. Final Report.

In 2016, the financial sector in the Republic of Croatia was characterized by two international companies (Kickstarter and Indiegogo) and one domestic company (Croinvest.eu), when it comes to Internet platforms of the sharing economy. In order to to simplify things, in the Republic of Croatia there are two basic types of companies that use Internet platforms of the sharing economy, namely those that operate according to the model of profit sharing and those that operate according to the model of non-profit sharing (eng. for-profit sharing and non-profit sharing). When it comes to the model of profit sharing related to cars, on the market in the Republic of Croatia we meet companies such as: Uber, BlaBlaCar and SpinCity. In the area of renting space (Living space), Airbnb dominates. Companies that use a profit-sharing model related to boat rentals include UberBoat and Click Boat. While at the travel organization we meet "Ajmoskupa.hr" platform. On the Croatian market of the sharing economy, we also meet the domestic company "Njuškalo", which offers various goods and services. On the other hand, companies that operate according to the model of non-profit sharing are, for example, "Ajmoskupa.hr", which deals with tourist arrangements, and Couchsurfing and HomeExchange, whose business is related to living space.

3.3. Regulatory framework of sharing economy in public transport

The expansion of the sharing economy makes it possible for idle sources to be used more effectively and, possibly, more sustainably by leveraging technology to connect providers and customers. Unfortunately, the sharing economy could also result in more consumption or more intense use from the same goods, increasing undesirable externalities and creating problems for regulators including local and state governments. The sharing economy business methods present additional and significant regulatory concerns which is not a suprise at all, given that the current legislation have still not been properly adjusted to these kind of business models. In addition, several components of the regulatory environment, including the taxation system and consumer protection laws, were still not considered of at the time such business models first developed. The regulatory environment in which sharing economy businesses presently operate was not created specificaly for them, which leads to the legal gaps, also it may be ch allenging for tax authorities to track down transactions, thereby encourages the growth of the submerged economy. There is also question whether prosumers (producers or consumers) are exploited by the sharing economy platforms (Wu et al., 2018). The EU Commission has preferred to use the term "collaborative economy" in place of "sharing economy" in its documents. Although the term "collaborative economy" can be misleading because it evokes the beliefs of altruism and solidarity (Frenken and Schor, 2019). There have been numerous difficulties in defining and categorize this business activity in order to establish how to regulate it however these efforts have resulted in confusion (Drahokoupil and Fabo, 2016). The legal status of sharing economy platform's

actions should be determined by a case-by-case review, in compliance with the European Commission (2016).

The collaborative economy uses a range of online services that may be categorized into patterns depending on the services offered, the labor recruited, and also the idle assets that are used. The rapid growth of the business volume of Internet platforms for the sharing economy has led to disruptions in many markets (local and national), so that certain countries have largely stopped or significantly limited the business activities of companies that use the business models of Internet platforms for the sharing economy (Airbnb, Uber). Generally speaking, the problem arose the moment it was realized that Internet platforms for the sharing economy have long outgrown their role as mere intermediaries between service providers and users. As an example, the Court of the European Union concluded that the mediation service provided by Uber must be considered integral part of the overall service, the main component of which is transportation, and therefore it must be classified as a *"service in the field of transport"* and not as an *"information society service"* (Sousa Ferro, 2019).

Uber began as nothing more than a digital platform Their mobile application serves as a bridge between customers and their service providers (Thelen, 2018). It is not difficult to understand that without the Internet platform for the sharing economy Uber would not be a transportation service. And perhaps more importantly, Uber itself has the main and decisive influence on the very provision of that service. Consequently, it is clear that a precise regulation of the business of Internet platforms for the sharing economy is necessary. The best solution for all legal problems related to the functioning and business of online platforms for the economy would be a combination of regulatory and self-regulatory measures (Cohen and Sundararajan, 2015). It is no secret that there are clear assumptions that many companies that use business models using online platforms of the sharing economy can easily find room for evasive tax payments or do not pay them evenly with awareness that some activities simply have to be taxed. Consequently, many countries have created institutional boundaries between the sharing economy and the regular economy by placing a ceiling on sharing activity. This especially applies to sharing economy activities related to home sharing. Of course, the same principle can be applied to some other types of sharing economy, such as: operators of home restaurants or owners of boats, campers and parking spaces, etc. All of this probably forced the European Union to apply the directive 2000/31/EC on certain legal aspects of the information society. The aforementioned directive specifically refers to electronic commerce in the internal market (E-Commerce Directive), setting clear limits and responsibilities for digital platforms (Echikson, 2020).

It is understandable that regulation of digital platforms had to be established within the European Union, and the European Parliament and the Council introduced (EU 2019/1150) the Regulation on promoting fairness and transparency for business users of online intermediary services (Regulation EU 2019/1150 of the European Parliament and of the Council of 20 June 2019 on promoting fairness and transparency for business users of online intermediation services). According to the aforementioned regulation, companies that use business models using online platforms of the sharing economy must disclose any competitive advantage that their products or clients enjoy over their competitors. They must also elaborate in detail how their data is collected, distributed and used. Namely, according to that regulation, companies that use business models using online platforms of the sharing economy must publish the main parameters used for ranking goods and services on their site. In 2020, the European Commission really showed its determination to regulate this issue by passing two important legal acts. It is about passing the *"Digital Services Act"* (DSA) and the *"Digital Markets Act"* (DMA). This regulatory mechanism aims to solve the problem of competition between the digital and 'ordinary' markets, ie. the problem when a platform is at the same time a platform and a competitor to other companies within that platform. However, it is already clear that the application of the "Digital Services Act" (DSA) to business users will still leave a gap in relation to non-business users. We are talking about the most ordinary non-professional consumers who are actually the main users of this platform. It is to be expected that the service provider-platform-consumer triangle will have to wait for a new round of regulatory activities (Dumančić and Avlona, 2022).

4. EMPIRICAL RESEARCH ON CUSTOMERS ATTITUDES TOWARD THE USE OF SHARING ECONOMY TRANSPORT SERVICES IN THE TIME OF PANDEMIC

4.1. Research method

The aim of the thesis is to investigate customers attitude toward the use of sharing economy transport services in the time of pandemic. The paper is based on the analysis of a large number of recent scientific papers that will not be specifically mentioned here, since they have been mentioned and analyzed in detail in the parts of this paper that are thematically related to the greatest extent. As a result, a questionnaire was designed to investigate the opinions and attitudes of respondents on the positive and negative sides of sharing economy public transport services.

For the purposes of the empirical research, *Customers attitude toward the use of sharng economy of public transport*, the technique of collecting primary data was used using a survey questionnaire, which was created in the online tool Google Forms and is completely anonymous. The questionnaire is composed of four parts: (A) Sociodemographic characteristics, (B) Attitudes related to the use of the sharing economy, (C) Reasons for use (advantages and disadvantages) and frequency of use of the sharing economy in traffic (open-ended questions) and (D) Attitudes regarding the use of the sharing economy during COVID-19. The questionnaire contains a total of 26 questions, of which only 15 and 16 are open-ended and the rest are closed-ended. The first part of the questionnaire (A) refers to general data such as age, gender, education, income and work status. The second part (B) refers to questions related to familiarity, attitudes and types of use of the sharing economy. In the third part (C), there are two open questions (15 and 16) related to the reasons for using (advantages) sharing economy, and the frequency of using sharing economy in traffic. The questions are designed in such a way that they give the possibility of choosing several reasons for using sharing economy. The last group of questions refers to attitudes regarding the use of the sharing economy in traffic during the COVID-19 pandemic. All questions (except part A and questions 15 and 16) consist of a certain number of statements for which the respondents had to indicate on a Likert scale the extent to which they agree or disagree, where 1 the most (Strongly agree) and 5 indicates the least agreeable (Strongly disagree).

The questionnaire was distributed on social networks during May and June 2022. It is a non-probabilistic convenience sample (availability on social networks) which was partly distributed according to the principle of the snowball effect - the respondents who filled out the questionnaire identify the next respondents, then the new respondents are forwarded to others. The questionnaire is presented in its entirety in the attachment of the paper. A total of 320 respondents filled out the

questionnaire completely. For the first (A) and second (B) parts of the questionnaire, descriptive statistics and analysis, graphics and tabular presentations were used. For the third part (C), descriptive statistics were used for the general display of attitudes, such as arithmetic means, medians and modes. In order to test the existence of a statistically significant difference in the ratings of the measured variables in relation to the gender of the respondents, the Mann-Whitney U test was used. Post hoc analysis with the Bonefforni criterion was used to determine statistical differences between groups in the research variables. Microsoft Excel and the Statistica Tibco 14.0 software package were used for data processing. Also, in the analysis of primary data, the Kruskal-Walli's test was used to test the existence of a statistically significant difference in the ratings of the measured variables (constructs) in relation to the age structure, work status, personal monthly income and professional education of the respondents.

4.2. Research results

Sociodemographic characteristics were examined in the first part of the questionnaire. A total of 320 respondents filled out the questionnaire to the end, and the results are summarized in Table 1. A higher proportion of women in the research is visible, i. e. 66.77%, while the proportion of men is 33.13%. Due to the nature of sharing the questionnaire, i. e. distribution via social networks, it is expected that the younger population is more represented in the sample. The largest number of participants belongs to the age group from 18 to 25 years (40%) and from 36 to 45 years (16.3%). Only 2.5% of respondents are over 65 years old. Work status refers to a large number of permanently employed persons (56.20%) and those who work through the student service (16.20%), followed by students who do not work (13.40%). It is evident from the Socio-demographic structure of the respondents that one should be careful when generalizing the data and drawing conclusions, because there is a large representation of women and the younger population in the sample.

Table 1. Sociodemographic structure of respondents

N=320		N	%
GENDER	Male	**106**	**33.13**
	Female	**214**	**66.77**
AGE	18-25	**128**	**40.00**
	26-35	**43**	**13.40**
	36-45	**52**	**16.30**
	46-55	**49**	**15.30**
	56-65	**40**	**12.50**
	65+	**8**	**2.5**
WORK STATUS	Employed; in a permenanent employment relationship.	**180**	**56.20**
	Employed; for a certain period of time.	**15**	**4.70**
	I work part-time.	**6**	**1.90**
	Student – I work through the student service (SC).	**52**	**16.20**
	Student – I don't work.	**43**	**13.40**
	Self-employed	**11**	**3.40**
	Unemployed	**12**	**3.70**
	I work through the pupil service.	**1**	**0.30**
PERSONAL MONTHLY INCOME	I have no personal income.	**13**	**4.10**
	I receive pocket money.	**35**	**11.00**
	Less then HRK 1,500	**12**	**3.70**
	HRK 1,500 – HRK 3,699	**33**	**10.30**
	HRK 3,700 – HRK 8,500	**111**	**34.70**
	HRK 8,501 – HRK 14,000	**71**	**22.20**
	HRK 14,001 – HRK 20,000	**26**	**8.10**
	HRK 20,000+	**19**	**5.90**
EDUCATION	No school education	**1**	**0.30**
	Finished primary school	**0**	**0**
	Completed high school up to 3 years	**8**	**2.50**
	Completed high school up to 4 years, gymnasium	**147**	**46.00**
	Student	**97**	**30.30**
	Completed bachelor's degree, collage	**25**	**7.80**
	Completed master's degree, PhD	**42**	**13.10**

Source: Created by the author based on collected data

In the second part of the questionnaire (B), questions related to familiarity, attitudes and types of use of the sharing economy were asked. The obtained results of the conducted research were analyzed from different aspects. With the aim of detailed analysis of the results of the conducted empirical research, descriptive statistics (arithmetic mean, median, mode, standard deviation, etc.) were prepared for all variables, i. e. for all questions asked in the questionnaire, except for two open questions (Table 2).

Table 2. Descriptive indicators

VARIABLES	**Mean ± SD**	**Median**	**Mod**	**Freq. of Mode**	**Quartile mod**	**Max-D**	**K-S p**
1. Gender	1,67±0,47	2	2	214	1	0,43	p < ,01
2. Age	2,54±1,55	2	1	128	3	0,22	p < ,01
3. Work status	2,53±1,94	1	1	180	3	0,35	p < ,01
4. Personal monthly income	4,89±1,72	5	5	111	2	0,23	p < ,01
5. Education	4,82±1,09	5	4	147	1	0,26	p < ,01
6. The sharing economy is an excellent economic model based on sharing, lending, renting or exchanging	1,92±0,68	2	2	187	1	0,29	p < ,01
7. Various forms of the sharing economy when it comes to shared mobility make extensive use.	2,68±1,07	2	2	140	1	0,27	p < ,01
8. Sharing economy platforms are rather used than traditional providers of the same services.	2,36±1,08	2	2	142	1	0,28	p < ,01
9. Sharing economy platforms are cheaper than traditional providers of the same services.	2,33±1,01	2	2	142	1	0,26	p < ,01
10. Gaining confidence in sharing economy platforms	2,38±0,89	2	2	164	1	0,30	p < ,01
11. Using platforms due to possibilities to order and pay for the use of a car	2,37±1,11	2	2	154	1	0,31	p < ,01
12. The use of car sharing model allows to use a car without having to own it or worry about its traffic and maintenance.	3,31±1,18	3	4	89	2	0,19	p < ,01

13. The ride-on-demand services are mostly used as forms of the sharing economy	2,29±1,11	2	2	142	1	0,29	p < ,01
14. The ride-on-demand services are used because they replace the traditional taxi and private car	2,35±1,09	2	2	140	1	0,28	p < ,01
15. On-demand professional transport services contribute to increasing traffic congestion	3,11±1,04	3	3	108	2	0,19	p < ,01
16. During the COVID-19 pandemic, public transport was usually used.	3,34±1,28	4	4	106	2	0,24	p < ,01
17. During the COVID-19 pandemic, using public transport was avoided.	2,60±1,27	2	2	113	2	0,25	p < ,01
18. Due to the pandemic, attitudes towards using public transport have changed.	2,44±1,13	2	2	126	1	0,25	p < ,01
19. Public transport will be used after the COVID-19 pandemic.	2,90±1,15	3	2	103	2	0,20	p < ,01
20. Beacuse of the health reasons, the use of a private car when traveling to work is increased.	3,22±1,09	3	3	117	1	0,19	p < ,01
21. Public transport in the Republic of Croatia meets European standards for the prevention and detection of specific pandemic risks.	3,20±1,23	3	4	86	2	0,18	p < ,01
22. Switching from a private vehicle to public transport results in a reduction of carbon dioxide.	3,51±1,06	4	4	106	1	0,21	p < ,01
23. Beacuse of the health reasons, the use of UBER, BOLT and similar companies that use the sharing economy as their business model have increased.	3,40±1,03	4	4	119	1	0,23	p < ,01
24. Switching from using UBER, BOLT and similar companies that use the sharing economy as their business model to using public transport results in a reduction of carbon dioxide.	3,53±0,93	4	4	116	1	0,21	p < ,01

Source: Created by the author based on collected data

The empirical research was designed so that all questions (except for part A and questions 15 and 16) consist of statements for which the respondents should indicate on a Likert scale the extent to which they agree or disagree, where 5 the least agreeable (Strongly disagree) and 1 the most (Strongly agree). Consequently, we first analyze those statements (variables) that have the smallest arithmetic mean, because they represent the statements with the highest agreement.

Table 2 shows that the variable (claim) *"The sharing economy is an excellent economic model based on sharing, lending, renting or exchanging."* (1.92; Mod 2) has the lowest arithmetic mean, followed by the variable that refers to more favorable prices. Sharing economy platforms are cheaper than traditional providers of the same services" (2.33; Mod 2). The third variable with the smallest arithmetic mean is the one that talks about the replacement of conventional services in traffic with those of the sharing economy, and reads: *"The ride-on-demand services are used because they replace the traditional taxi and private car."* (2.35; Mod 2). From the obtained results, it can be concluded that the respondents are familiar with the concept of sharing economy and that their most frequent answer was that they agree with the statement ("I agree"), since the Mode has a value of 2. It is also evident from Table 2 that respondents are aware of more favorable prices related to the business model of the sharing economy in public transport. They consider these lower drains to be a distinct advantage of this business model. Almost as important as the previous variable (arithmetic mean and mode) is the statement that clearly states that respondents agree with the replacement of conventional forms of public transport with those that use digital platforms of the sharing economy in traffic. The fourth variable with the smallest arithmetic mean (2.36; Mod 2) reads *"Sharing economy platforms are rather used than traditional providers of the same services."* and actually confirms the previous claims about the awareness of replacing conventional forms of public transport with those that use digital platforms of the sharing economy in traffic. The statement *"Using platforms due to possibilities to order and pay for the use of a car."* (2.37; Mode 2) has almost the same importance for the respondents as the previous statements with which the respondents agree the most.

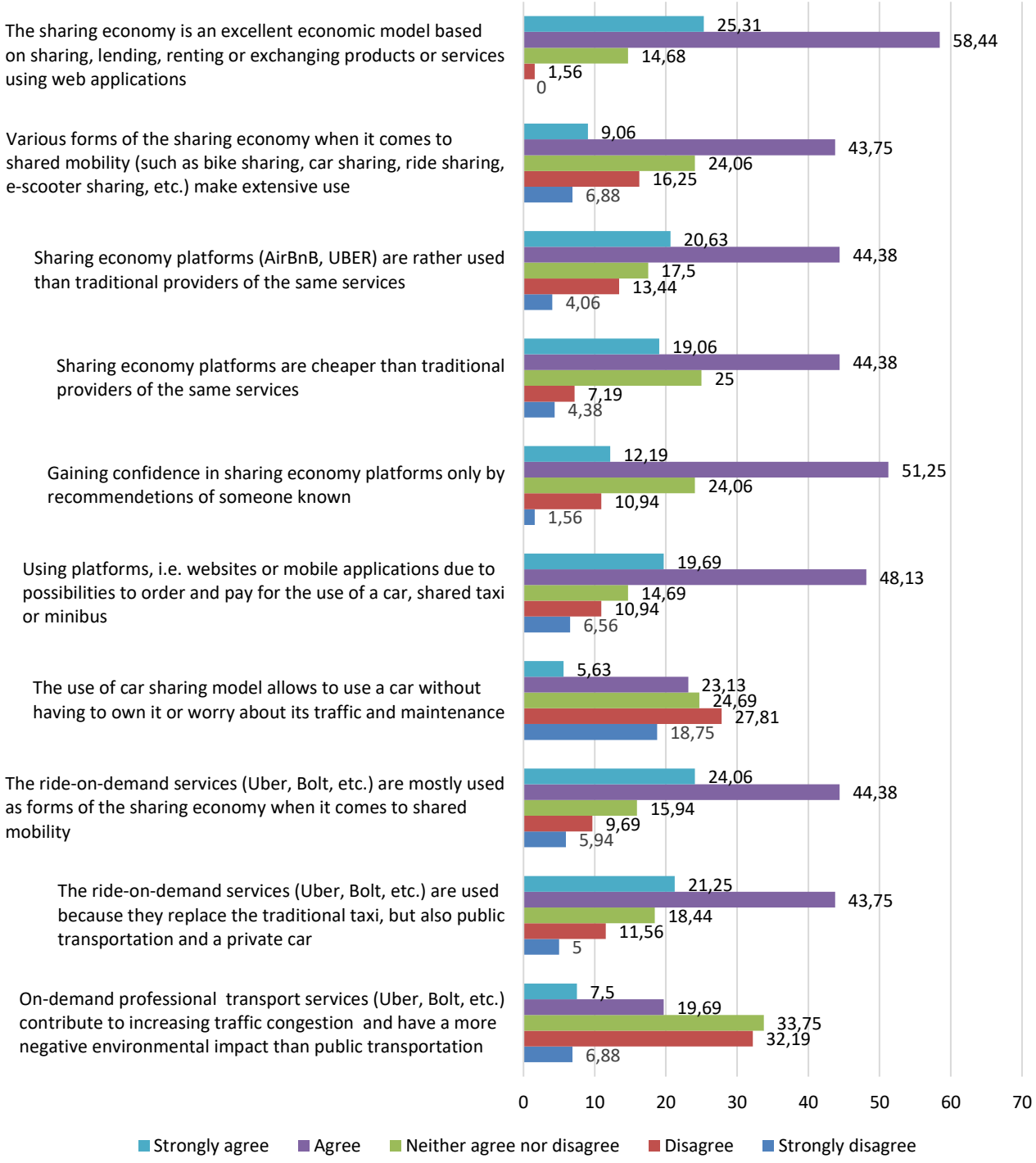
Namely, the results of the conducted research indicate that respondents are aware of the advantages of ordering and paying for rides via digital platforms of the sharing economy in public transport. As we have already mentioned in this empirical research, on the Likert scale, 5 indicates the least agreeable (Strongly disagree) and 1 the most (Strongly agree). Consequently, those statements (variables) that have the highest arithmetic mean represent statements with the least agreement or with the greatest disagreement. Table 2 shows that the variable (statement) *"Switching from using UBER, BOLT and similar companies that use the sharing economy as their business model to using public transport results in a reduction of carbon dioxide."* has the highest arithmetic mean (3.53; Mode 4). Then the

results of the research show that the next statement with which the respondents least agree is *"Switching from a private vehicle to public transport results in a reduction of carbon dioxide."* (3.51; Mod 4). Analyzing the results of the empirical research, it is clear that the respondents will not stop using public transport companies that use the business model of digital platforms of the sharing economy (UBER, BOLT) and switch to public transport, since it pollutes the environment less with carbon dioxide emissions. Likewise, the research results indicate that the respondents will not stop using a private car for the same reason and will not switch to using public transport. Everything indicates that the respondents will not change their decisions regarding the use of public transport in order to reduce environmental pollution with carbon dioxide emissions. Since the respondents also least agree with the statement *"Beacuse of the health reasons, the use of UBER, BOLT and similar companies that use the sharing economy as their business model have increased."* (3.40; Mode 4), it is evident that they do not use public transport companies that use the business model of digital platforms of the sharing economy (UBER, BOLT) for health reasons. This is precisely what additionally confirms the least agreement with the statement *"During the COVID-19 pandemic, public transport was usually used."* (3.34; Mode 4). Namely, according to the results of the conducted research, it follows that the COVID-19 pandemic is not the reason for the use of companies in public transport that use the business model of digital platforms of the sharing economy. Likewise, the research results indicate that car sharing is not motivated by avoiding the costs of owning a car and traffic problems, he doesn't have to have his own car. For all these statements with which respondents agree the least, the most common was the answer "I don't agree" (Mod 4). Furthermore, from the analysis of the obtained data, it is clear that the vast majority, i.e. 83.75% of respondents are familiar with the concept of the sharing economy and what is even more important, 52.81% of them use different forms of public transport companies (UBER, BOLT, etc.) that use the business model of digital economy platforms sharing.

From the obtained results of the translated research, it is also evident that 65.01% of the respondents prefer to use different forms of public transport companies (UBER, BOLT, etc.) that use the business model of digital sharing economy platforms than classic forms of public transport (taxi, bus, etc.). As many as 63.44% of respondents do so because of lower prices compared to the same forms of classic public transport. The same proportion of respondents (63.44%) use different forms of public transport companies (UBER, BOLT, etc.) that use the business model of digital platforms of the sharing economy because their acquaintances recommended it (Graph 4). 67.82% of respondents claim that they use digital platforms of the sharing economy in public transport because they enable them to order and pay for services in public transport. It is interesting to note that even 46.56% of respondents do

not use the "car sharing model", 24.69% of them are undecided and only 27.19% of respondents use the mentioned form of sharing economy in public transport. It is evident from Graph 4. that respondents (68.44%) most often use ride-hailing (Uber, Bolt, etc.) when it comes to the form of ride sharing. More than half of the respondents (65%) use this form of ride sharing because it replaces the traditional taxi, public transport and private car (Graph 4). Of particular concern is the fact that there is a large number of respondents (39.07%) who do not agree with the statement, but also those who are undecided (33.74%), the ride-on-demand services (Uber, Bolt, etc.) as a form of ride-sharing has more negative impact on the environment than public transport.

Graph 4. Familiarity, attitudes and types of use of sharing economy in public transport

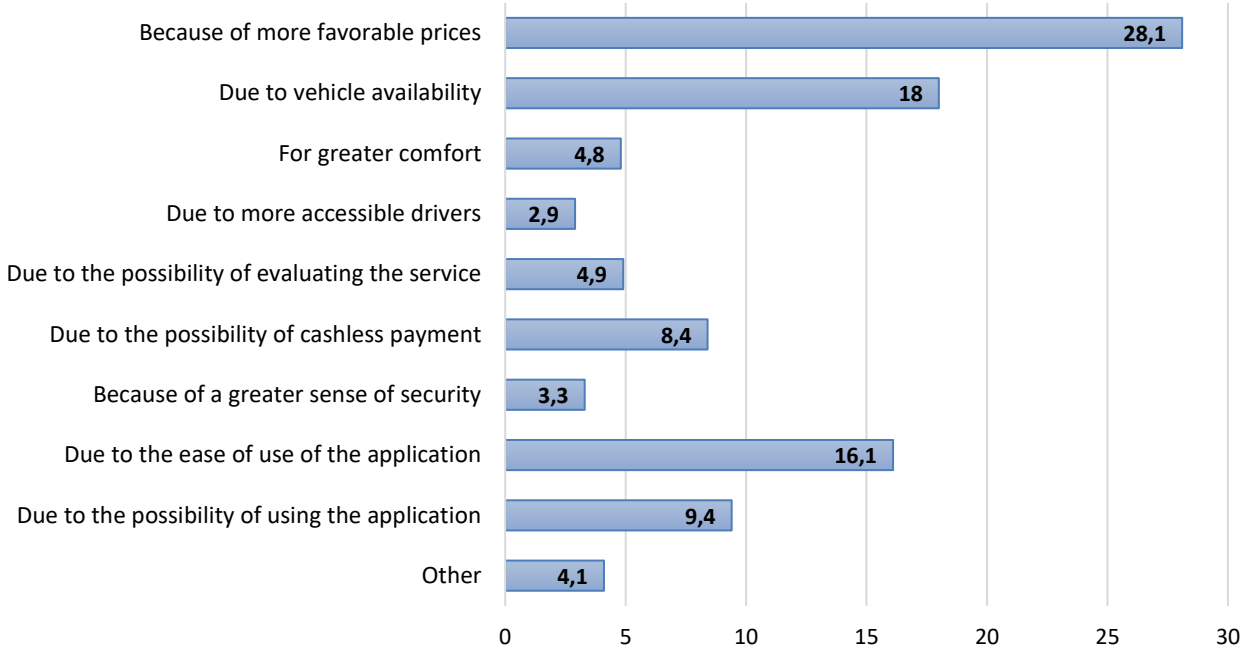


Source: created by the author based on collected data

In the third part (C), there are two open questions (15 and 16) related to the reasons for use and the frequency of use by ride-on-call users as a form of ride-sharing in public transport. Question 15 is designed in such a way that it gives the respondent the opportunity to choose several reasons for using the sharing economy. From the obtained research results (Graph 5), it is clear that respondents use the

ride-on-demand services (Uber, Bolt, etc.) as a form of ride-sharing, i.e. a business model of digital sharing economy platforms in public transport, because they are more affordable, easily accessible and easy to use. use their digital sharing economy platforms (Graph 5).

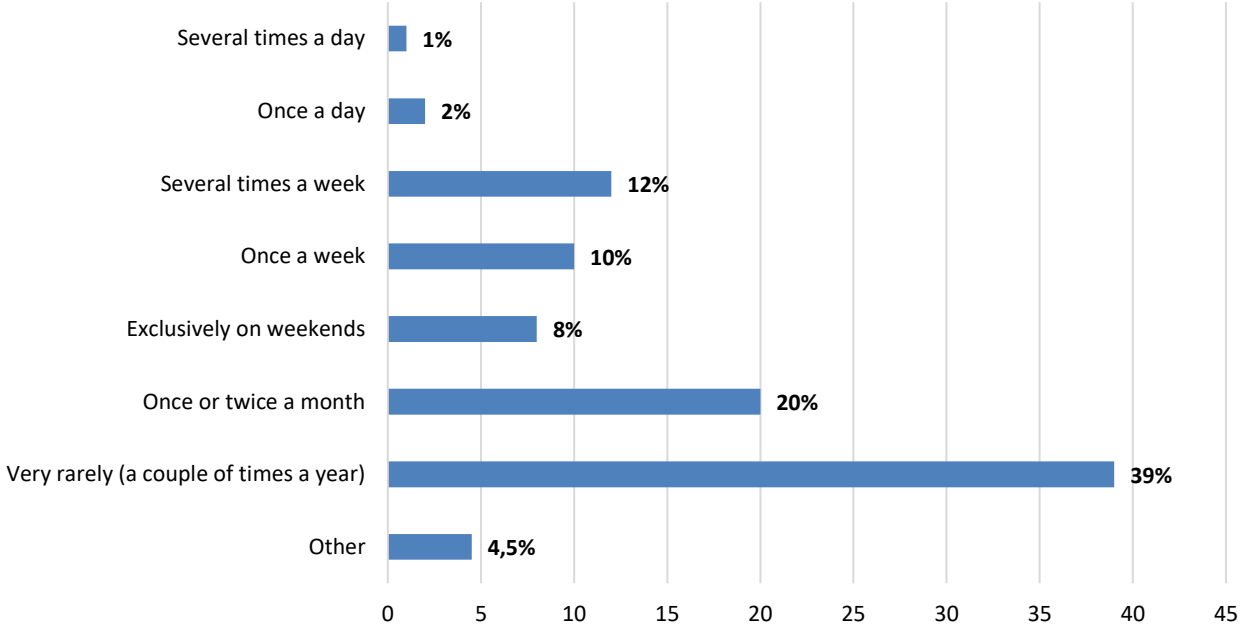
Graph 5. Reasons for use of ride-on-demand services (Uber, Bolt, etc.)



Source: created by the author based on collected data

When it comes to the frequency of using the ride-on-demand services as a form of ride-sharing in public transport, the obtained results indicate that the respondents use this model of digital platforms of the sharing economy in public transport most often several times a year (39%), and 20% of them use it once or twice a month (Graph 6) It is interesting to note that only 12% of respondents use the mentioned form of driving several times a week.

Graph 6. Frequency of using ride-on demand services



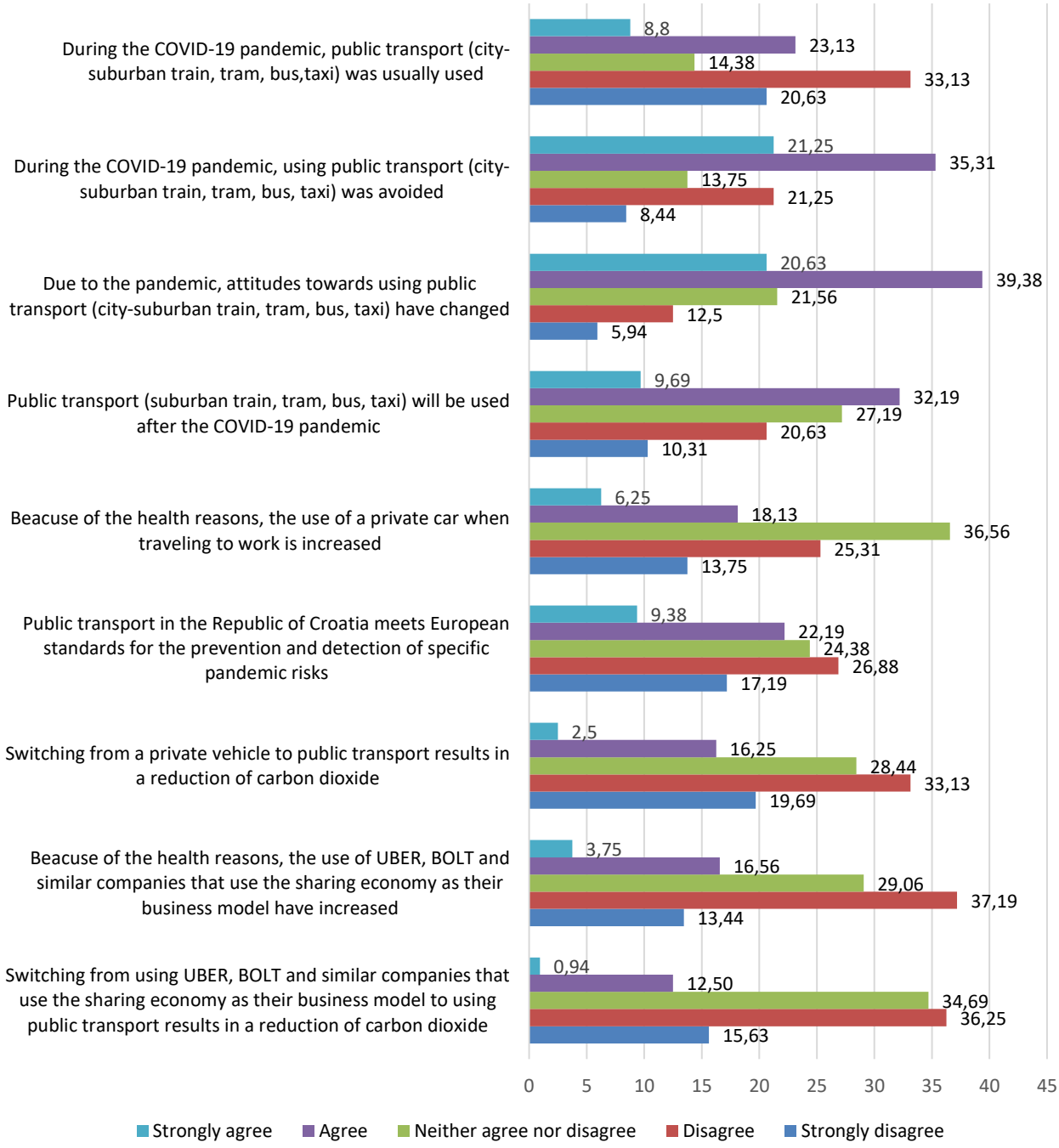
Source: created by the author based on collected data

Since the COVID-19 pandemic has affected various aspects of human life, the last group of questions (D) refers to the respondents' behavior related to the use of the sharing economy in traffic during the COVID-19 pandemic. Even with a superficial analysis of the results obtained related to the use of usual public transport during COVID-19, we come to the realization that only 31.93% of respondents used public transport as usual (question number 18). We also asked a "control" question in order to get as accurate a result as possible regarding the use of public transport during the COVID-19 pandemic (question number 19). The obtained results confirm the position from the previous question, namely, 56.56% of respondents avoided using public transport during the COVID-19 pandemic (Graph 4). That their attitude towards the use of public transport during the COVID-19 pandemic has changed is confirmed by the results related to question number 20. Namely, 60.01% of respondents stated that they had changed their attitude towards the use of public transport during the COVID-19 pandemic, while only 18.4% remained with the same attitude as before the pandemic. It is important to note that a relatively large part of them remained undecided (21.56%). The results of the conducted empirical research indicate the uncertainty of the use of public transport after the COVID-19 pandemic (question number 21). Only 41.88% of respondents stated that they would use public transport after the COVID-19 pandemic, while 27.19% were undecided. The picture of uncertainty is completed by the obtained research results related to the question about fear for health (question number 22). Only 14.38% of respondents stated that they will use a private car to travel to work after the COVID-19 pandemic,

while 36.56% of them are undecided (Graph 7). On the other hand, only 18.75% of respondents will stop using a private car and switch to public transport in order to reduce environmental pollution by reducing carbon dioxide emissions (question number 24). On the one hand there is low awareness of personal contribution to environmental protection. On the other hand, the poor quality of public transport certainly contributes to this, since only 31.57% of respondents believe that public transport in the Republic of Croatia corresponds to European standards (question number 23). Then the results of the research indicate that only 20.35% of respondents will increasingly use the services of companies in public transport (UBER, BOLT, etc.) that practice the business model of digital platforms of the sharing economy (question number 25).

Research results related to the last question (question number 26), that only confirm the respondents' low awareness of their personal contribution to reducing environmental pollution by carbon dioxide emissions caused by traffic. The above results indicate that only 13.44% of respondents are ready to switch to public transport and stop using public transport companies (UBER, BOLT, etc.) that practice the business model of digital platforms of the sharing economy in order to reduce environmental pollution by carbon dioxide emissions. Optimism related to the above is only inspired by the fact that there is a relatively large share of respondents who have not yet decided (34.69%) on this issue.

Graph 7. Attitudes related to the use of the sharing economy in transport during the COVID-19 pandemic



Source: Created by the author based on collected data

In order to test the existence of a statistically significant difference in the ratings of the measured variables in relation to the gender of the respondents, the Mann-Whitney U test was used. The Mann-Whitney U test was important, since this is the way to test the existence of a statistically significant difference between the dependent variable measured on an ordinal scale and two independent samples measured on a nominal scale (Sekaran, 2000).

Table 3. Mann-Whitney U test of existence of statistically significant differences of measured variables in relation to the respondent's gender

VARIABLES	Mann-Whitney U Test (w/ continuity correction) By variable Var1 Marked tests are significant at p <,05000								
	Rank Sum Group 1	Rank Sum Group 2	U	Z	p-value	Z adjusted	p-value	Valid N Group 1	Valid N Group 2
6. The sharing economy is an excellent economic model based on sharing, lending, renting.	18154,00	33206,00	10201,00	1,46	0,14	1,66	0,10	106	214
7. Various forms of the sharing economy when it comes to shared mobility make extensive use.	17515,50	33844,50	10839,50	0,64	0,52	0,68	0,50	106	214
8. Sharing economy platforms are rather used than traditional providers of the same services.	17684,00	33676,00	10671,00	0,86	0,39	0,91	0,36	106	214
9. Sharing economy platforms are cheaper than traditional providers of the same services.	18098,50	33261,50	10256,50	1,39	0,16	1,48	0,14	106	214
10. Gaining confidence in sharing economy platforms.	18240,50	33119,50	10114,50	1,58	0,12	1,71	0,09	106	214
11. Using platforms due to possibilities to order and pay for the use of a car.	19272,00	32088,00	9083,00	2,90	0,00	3,10	0,00	106	214
12. The use of car sharing model allows to use a car without having to own it or worry about its traffic and maintenance.	17789,50	33570,50	10565,50	1,00	0,32	1,03	0,31	106	214
13. The ride-on-demand services are mostly used as forms of the sharing economy	18377,00	32983,00	9978,00	1,75	0,08	1,85	0,06	106	214
14. The ride-on-demand services are used because they replace the traditional taxi and private car.	18579,50	32780,50	9775,50	2,01	0,04	2,12	0,03	106	214
17. On-demand professional transport services contribute to increasing traffic congestion	17101,50	34258,50	11253,50	0,11	0,91	0,12	0,91	106	214
18. During the COVID-19 pandemic, public transport was usually used.	17077,00	34283,00	11278,00	0,08	0,94	0,08	0,93	106	214

19. During the COVID-19 pandemic, using public transport was avoided.	18020,00	33340,00	10335,00	1,29	0,20	1,34	0,18	106	214
20. Due to the pandemic, attitudes towards using public transport have changed.	18731,00	32629,00	9624,00	2,20	0,03	2,30	0,02	106	214
21. Public transport will be used after the COVID-19 pandemic.	18062,50	33297,50	10292,50	1,35	0,18	1,39	0,16	106	214
22. Beacuse of the health reasons, the use of a private car when traveling to work is increased	15777,50	35582,50	10106,50	-1,59	0,11	-1,65	0,10	106	214
23. Public transport in the Republic of Croatia meets European standards for the prevention and detection of specific pandemic risks.	17137,50	34222,50	11217,50	0,16	0,87	0,16	0,87	106	214
24. Switching from a private vehicle to public transport results in a reduction of carbon dioxide.	18595,50	32764,50	9759,50	2,03	0,04	2,11	0,04	106	214
25. Beacuse of the health reasons, the use of UBER, BOLT and similar companies that use the sharing economy as their business model have increased.	18759,00	32601,00	9596,00	2,24	0,03	2,34	0,02	106	214
26. Switching from using UBER, BOLT and similar companies that use the sharing economy as their business model to using public transport results in a reduction of carbon dioxide.	17809,00	33551,00	10546,00	1,02	0,31	1,07	0,28	106	214

Source: Created by the author based on collected data

Table 3 shows that on average, women agree more than men in almost all statements (questions in the questionnaire). Based on the Mann-Whitney U test (Table 3), it was determined that, regarding questions 11, 14 , 20, 24 and 25 (variables), there is a statistically significant difference in attitudes between women and men. It follows from the above that there is a significant difference between women and men when it comes to the reasons for using platforms related to the possibility of ordering and paying for the use of cars, taxis or minibuses (question 11). There is also a statistically significant difference between women and men when it comes to the reasons for using "ride-on-demand services (Uber, Bolt, etc.)" contained in question number 14. Similarly, the Mann-Whitney U test indicates that women changed their attitude regarding the pandemic towards public transport more significantly than men (question 20). From Table 3. it can be concluded that there is a statistically significant difference in attitudes between women and men when it comes to concern for environmental protection and stopping the use of private vehicles and switching to public transport (question 24). The Mann-Whitney U test also determines a statistically significant difference in the attitudes between women and men when it comes to health care and, as a result, the increased use of those companies (Uber, Bolt, etc.) that use the business model of digital sharing economy platforms in public transport (question 25). The t-test also confirms the existence of differences in attitudes according to gender in relation to the tested variables. Namely, the T-test also confirmed as well as the Mann-Whitney U test that there is a statistically significant difference in the attitude of women compared to men when it comes to questions 11, 14, 20, 24 and 25 (variables) from the questionnaire.

Kruskal-Wallis analysis of variance is used to test the existence of a statistically significant difference of the dependent variable in relation to several independent samples (k) measured on a nominal scale. This test is used when the conditions for applying the ANOVA test are not met, that is, in the case when the condition of normality of data distribution is not met (Sekaran 2000). The assumption for using Kruskal-Wallis analysis of variance is that the variables are continuously distributed and that the variables are the lowest in the ordinal scale. In the analysis of primary data, the Kruskal-Wallis test was used to test the existence of a statistically significant difference in the ratings of the measured constructs in relation to the age structure, work status, personal monthly income and education of the respondents. Testing with the Kruskal-Wallis test is divided into testing variables in two parts. The first part refers to testing (B) variables (questions in the questionnaire from 6 to 17, except for questions 15 and 16), which relate to familiarity, attitudes and types of use.

sharing economy in public transport. The second part refers to the testing of (D) variables (questions in the questionnaire from 18 to 26) that refer to questions related to the use of the sharing economy in public transport during the COVID-19 pandemic.

The results of the Kruskal-Wallis test indicate that there is a statistically significant difference between the age structure of the respondents regarding the following variables: 8, 12, 13, 14, 17, (Table 4). The above test shows that there is a statistically significant difference between respondents aged 18 to 25 and those aged 36 to 45 when it comes to *("Sharing economy platforms (AirBnB, UBER) are rather used than traditional providers of the same services."*) preferred use the model of digital platforms of the sharing economy in public transport compared to those classic models (Variable 8). Namely, respondents between the ages of 18 and 25 use the model of digital platforms of the sharing economy in public transport more than those who are between the ages of 36-45.

The Kruskal-Wallis test confirms that there is a statistically significant difference between the attitudes of respondents aged 18 to 25 and those aged 46 to 55 when it comes (variable 12) to the question related to (*"The use of car sharing model allows to use a car without having to own it or worry about its traffic and maintenance."*), in the questionnaire, i.e. the attitude about replacing one's own car with a "car sharing model". The above data indicate that respondents aged 18 to 25 agree less with the above statement than those aged 46 to 55 (Table 4). Furthermore, the Kruskal-Wallis test confirms that there is a statistically significant difference between the attitudes of respondents aged 18 to 25 and those aged 26 to 55 (age groups 2, 3 and 4) when it comes to the question related to (variable 13) *"The ride-on-demand services (Uber, Bolt, etc.) are mostly used as forms of the sharing economy when it comes to shared mobility."*. A more detailed analysis revealed that respondents aged 18 to 25 agree with the above statement to a greater extent than those aged 26 to 55 (age groups 2, 3 and 4). The same Kruskal-Wallis test reveals the existence of statistically significant differences between the attitudes of respondents aged 18 to 25 and those aged 36 to 45 regarding variable 14 (*"The ride-on-demand services, Uber, Bolt, etc., are used because they replace the traditional taxi, but also public transportation and a private car."*) that respondents aged 18 to 25 use Uber and Bolt more, replacing them with traditional forms of public transportation (Table 4).

The Kruskal-Wallis test confirms that there is a statistically significant difference between the attitudes of respondents aged 18 to 25 and those aged 56 to 65 when it comes to the question related to variable 17 (*"On-demand professional transport services (Uber, Bolt, etc.) contribute to increasing traffic congestion and have a more negative environmental impact than public transportation."*.). A detailed

analysis shows that respondents aged 18 to 25 agree more with the above statement than those who belong to the group aged 56 to 65.

Table 4. Kruskal-Wallis test of statistically significant differences of using the sharing economy in relation to the age structure

VARIABLES	H	statistically significant difference in relation to age	sig.	age group between which there is a difference	p
The sharing economy is an excellent economic model based on sharing, lending, renting or exchanging products or services using web applications.	6,73	No	0,2416		
Various forms of the sharing economy when it comes to shared mobility (such as bike sharing, car sharing, ride sharing, e-scooter sharing, etc.) make extensive use.	10,09	No	0,0727		
Sharing economy platforms (AirBnB, UBER) are rather used than traditional providers of the same services.	**22,37**	**Yes**	**0,0004**	**18-25 and 36-45**	**0,002**
Sharing economy platforms are cheaper than traditional providers of the same services.	9,70	No	0,0843		
Gaining confidence in sharing economy platforms only by recommendetions of someone known.	8,30	No	0,1403		
Using platforms, i.e. websites or mobile applications due to possibilities to order and pay for the use of a car, shared taxi or minibus.	8,23	No	0,1441		
The use of car sharing model allows to use a car without having to own it or worry about its traffic and maintenance.	**17,89**	**Yes**	**0,0031**	**18-25 and 46-55**	**0,008**
The ride-on-demand services (Uber, Bolt, etc.) are mostly used as forms of the sharing economy when it comes to shared mobility.	**36,09**	**Yes**	**0,0000**	**18-25 with 26-35; 36-45; 46-55**	**0,025 0,000 0,014**
The ride-on-demand services (Uber, Bolt, etc.) are used because they replace the traditional taxi, but also public transportation and a private car.	**19,24**	**Yes**	**0,0017**	**18-25 and 36-45**	**0,000**
On-demand professional transport services (Uber, Bolt, etc.) contribute to increasing traffic congestion and have a more negative environmental impact than public transportation.	**15,79**	**Yes**	**0,0075**	**18-25 and 56-65**	**0,017**

Source: Created by the author based on collected data

The Kruskal-Wallis test related to the testing of variables connected to COVID-19 also indicates that there are statistically significant differences between the age structure of the respondents and the following variables (questions from the questionnaire): 18, 19, 21, 23 and 24 (Table 5). The aforementioned test proved a statistically significant difference between the attitudes of respondents aged 18 to 25 and those aged 36 to 45 regarding (variable 18) the use of common forms of public transport during the COVID-19 pandemic (*"During the COVID-19 pandemic, public transport (city-suburban train, tram, bus, taxi) was usually used."*). Respondents aged 18 to 25 used more common forms of public transport during the COVID-19 pandemic than those aged 36 to 45. The Kruskal-Wallis test also confirms that there is a statistically significant difference between the attitudes of respondents aged 18 to 25 and those aged 36 to 65 (age groups 3, 4 and 5) when it comes to (variable 19) the question of avoiding public transport during COVID -19 pandemic. This confirms the accuracy of the results of the Kruskal-Wallis test regarding the testing of the previous variable. Simply put, respondents aged between 18 and 25 were the least likely to avoid using public transport during the COVID-19 pandemic. Furthermore, the Kruskal-Wallis test confirms that there is a statistically significant difference between the attitudes of respondents aged 18 to 25 and those aged 56 to 65, as well as a statistically significant difference between the attitudes of respondents aged 26 to 35 and those aged 56 to 65 regarding variable 20. (*"Public transport (suburban train, tram, bus, taxi) will be used after the COVID-19 pandemic."*). Namely, this indicates that respondents aged 56 to 65 agree more with the above statement compared to those aged 18 to 25 and those aged 26 to 35. So they believe more that *"Public transport (suburban train, tram, bus, taxi) will be used after the COVID-19 pandemic."*. The analysis of the Kruskal-Wallis test related to the claim that "Public transport in the Republic of Croatia meets European standards for the prevention and detection of specific pandemic risks" leads to the realization that in relation to this claim there is a statistically significant difference between the attitudes of respondents aged 18 to 25 and those aged 46 to 55, as well as those over 65. A more detailed analysis reveals that older respondents (from 46 to 55 and +65) agree with this statement more than those from 18 to 25. The Kruskal-Wallis test also confirms that there is a statistically significant difference between the attitudes of respondents aged 18 to 25 and those aged 46 to 55 as well as those older than 56 to 65 when it comes to the question of *"Switching from a private vehicle to public transport results in a reduction of carbon dioxide."*. Respondents aged 18 to 25 compared to those aged 46 to 55, as well as those older than 56 to 65, agree less with the above statement.

Table 5. Kruskal-Wallis test of statistically significant differences of using the sharing economy related to COVID-19 in relation to the age structure

VARIABLES	H	statistically significant difference in relation to age	sig.	age group between which there is a difference	p
During the COVID-19 pandemic, public transport (city-suburban train, tram, bus, taxi) was usually used.	**15,78**	**Yes**	**0,0075**	18-25 and 36-45	**0,008**
During the COVID-19 pandemic, using public transport (city-suburban train, tram, bus, taxi) was avoided.	**27,77**	**Yes**	**0,0000**	18-25 s 36-45; 46-55; 56-65	**0,005 0,006 0,000**
Due to the pandemic, attitudes towards using public transport (city-suburban train, tram, bus, taxi) have changed.	9,30	No	0,0977		
Public transport (suburban train, tram, bus, taxi) will be used after the COVID-19 pandemic.	**21,87**	**Yes**	**0,0006**	**(18-25 and 56-65); (26-35 and 56-65)**	**0,000 0,015**
Beacuse of the health reasons, the use of a private car when traveling to work is increased.	6,95	No	0,2243		
Public transport in the Republic of Croatia meets European standards for the prevention and detection of specific pandemic risks.	**27,80**	**Yes**	**0,0000**	**18-25 s 46-55; 65+**	**0,000 0.016**
Switching from a private vehicle to public transport results in a reduction of carbon dioxide.	**25,60**	**Yes**	**0,0001**	**18-25 s 46-55; 56-65**	**0,004 0,036**
Beacuse of the health reasons, the use of UBER, BOLT and similar companies that use the sharing economy as their business model have increased.	6,22	No	0,2855		
Switching from using UBER, BOLT and similar companies that use the sharing economy as their business model to using public transport results in a reduction of carbon dioxide.	4,20	No	0,5215		

Source: Created by the author based on collected data

By testing the statistically significant difference between the work status (variable 3) and all other variables using the Kruskal-Wallis test, it was determined that there is a statistically significant difference between the working status variable and the following variables: 12, 13, 17, 18, 19 and 23 (Table 6.). The aforementioned test proved a statistically significant difference between the attitudes of respondents who are students (not working) and the unemployed, and in connection with the statement "The use of car sharing model allows to use a car without having to own it or worry about its traffic and maintenance". A more detailed analysis shows that unemployed respondents agree more with the stated statement. The Kruskal-Wallis test also confirms that there is a statistically significant difference between the attitudes of respondents employed in permanent employment and students who work through the student service when it comes to the issue related to "The ride-on-demand services (Uber, Bolt, etc.) are mostly used as forms of the sharing economy when it comes to shared mobility". Students who work through the student service agree more with the above statement than those who are employed in a permanent employment relationship. In conclusion, they use Uber and Bolt more.

Furthermore, when it comes to the work status of the respondents, the Kruskal-Wallis test confirms that there is a statistically significant difference between the attitudes of respondents who work "I work part-time" (G3) and student - I work through the student service (SC), student - I don 't work (G5) and self-employed. (Table 6). When it comes to variable 17 ("On-demand professional transport services (Uber, Bolt, etc.) contribute to increasing traffic congestion and have a more negative environmental impact than public transportation"). Namely, Students (student - I work through the student service, student - I don't work) as well as self-employed agree more with the stated statement compared to those "I work part-time". So, they are more aware of the pollution caused by "On-demand professional transport services (Uber, Bolt, etc.)" (Table 6).

Table 6. Kruskal-Wallis test of statistically significant differences of using the sharing economy in relation to work status

VARIABLES	H	statistically significant difference in relation to age	sig.	age group between which there is a difference	p
The sharing economy is an excellent economic model based on sharing, lending, renting or exchanging products or services using web applications.	10,49	No	0,1623		
Various forms of the sharing economy when it comes to shared mobility (such as bike sharing, car sharing, ride sharing, e-scooter sharing, etc.) make extensive use.	6,55	No	0,4769		
Sharing economy platforms (AirBnB, UBER) are rather used than traditional providers of the same services.	16,42	No	0,0216		
Sharing economy platforms are cheaper than traditional providers of the same services.	4,07	No	0,7721		
Gaining confidence in sharing economy platforms only by recommendetions of someone known.	9,74	No	0,2038		
Using platforms, i.e. websites or mobile applications due to possibilities to order and pay for the use of a car, shared taxi or minibus.	5,06	No	0,6524		
The use of car sharing model allows to use a car without having to own it or worry about its traffic and maintenance.	**19,08**	**Yes**	**0,0079**	**5 and 7 group**	**0,005**
The ride-on-demand services (Uber, Bolt, etc.) are mostly used as forms of the sharing economy when it comes to shared mobility.	**34,00**	**Yes**	**0,0000**	**1 and 4 group**	**0,000**
The ride-on-demand services (Uber, Bolt, etc.) are used because they replace the traditional taxi, but also public transportation and a private car.	13,82	No	0,0545		
On-demand professional transport services (Uber, Bolt, etc.) contribute to increasing traffic congestion and have a more negative environmental impact than public transportation.	**23,95**	**Yes**	**0,0012**	**3 with 4,5,6**	**0,006 0,004 0,010**

Source: Created by the author based on collected data

The Kruskal-Wallis test regarding the testing of variables related to COVID-19 also indicates that there are statistically significant differences between the working status variable and the following variables: 18, 19 and 23 (Table 7). The aforementioned test proved a statistically significant difference between the attitudes of respondents of permanent employees "employed; in a permanent employment relationship, and those from educational groups (G4 and G5) "student - I work through the student service (SC)" and "student - I don't work" in relation to clause number 18 "During the COVID- 19 pandemic, public transport (city-suburban train, tram, bus, taxi) was usually used". A more precise analysis revealed that respondents "student - I work through the student service (SC)" and "student - I don't work" used public transport (city-suburban train, tram, bus, taxi) more than of employees "employed in a permanent employment relationship", during the COVID-19 pandemic (Table 7).

The Kruskal-Wallis test related to the testing of variable 19 "During the COVID-19 pandemic, using public transport (city-suburban train, tram, bus, taxi) was avoided" also indicates that there are statistically significant differences between the group (1) "employed; in a permanent employment relationship" and group (4) "student - I work through the student service (SC)". Students agree less with the statement, which means that they avoided public transport (city-suburban train, tram, bus, taxi) less.

Furthermore, when it comes to the work status of the respondents, the Kruskal-Wallis test confirms that there is also a statistically significant difference between the group (1) "employed; in a permanent employment relationship" and group (4) "student - I work through the student service (SC)", when it comes to variable 23 mainly "Public transport in the Republic of Croatia meet European standards for the prevention and detection of specific pandemic risks" (Table 7). Students agree less with this statement, and do not believe that "Public transport in the Republic of Croatia meets European standards for the prevention and detection of specific pandemic risks".

Table 7. Kruskal-Wallis test of statistically significant differences of using the sharing economy related to COVID-19 in relation to work status

VARIABLES	H	statistically significant difference in relation to age	sig.	age group between which there is a difference	p
During the COVID-19 pandemic, public transport (city-suburban train, tram, bus, taxi) was usually used.	**33,55**	**Yes**	**0,0000**	**1 with 4,5**	**0,000 0,009**
During the COVID-19 pandemic, using public transport (city-suburban train, tram, bus, taxi) was avoided.	**27,35**	**Yes**	**0,0003**	**1 and 4**	**0,000**
Due to the pandemic, attitudes towards using public transport (city-suburban train, tram, bus, taxi) have changed.	18,71	No	0,1166		
Public transport (suburban train, tram, bus, taxi) will be used after the COVID-19 pandemic.	11,54	No	0,1166		
Beacuse of the health reasons, the use of a private car when traveling to work is increased.	12,00	No	0,1005		
Public transport in the Republic of Croatia meets European standards for the prevention and detection of specific pandemic risks.	**23,10**	**Yes**	**0,0016**	**1 and 4**	**0,013**
Switching from a private vehicle to public transport results in a reduction of carbon dioxide.	8,59	No	0,2835		
Beacuse of the health reasons, the use of UBER, BOLT and similar companies that use the sharing economy as their business model have increased.	4,32	No	0,7418		
Switching from using UBER, BOLT and similar companies that use the sharing economy as their business model to using public transport results in a reduction of carbon dioxide	9,23	No	0,2366		

Source: Created by the author based on collected data

Testing using the Kruskal-Wallis test for statistically significant differences between the variable personal monthly income (variable 4) and all other variables (Table 8) led to the realization that there is a statistically significant difference between the variable personal monthly income and variables: 7, 8, 13, 17, 18, 19 and 20.

The Kruskal-Wallis test related to the testing of variable 7 *"Various forms of the sharing economy when it comes to shared mobility (such as bike sharing, car sharing, ride sharing, e-scooter sharing, etc.) make extensive use"* indicates that there are statistically significant differences in attitudes between respondents who have a personal monthly income from HRK 3,700 to HRK 8,500 and those with a personal monthly income of "more than HRK 20,000" (Table 8). The conducted analysis confirms that respondents who have a personal monthly income from HRK 3,700 to HRK 8,500 agree more with the above statement, which means that they use *"Various forms of the sharing conomy when it comes to shared mobility" more than those with a personal monthly income"* more than HRK 20,000"

The Kruskal-Wallis test also confirms that there is a statistically significant difference between the views of respondents who have a personal monthly income from HRK 1,500 to HRK 3,3699 and those with a personal monthly income from HRK 14,001 to HRK 20,000. when it comes to the issue related to *"Sharing economy platforms (AirBnB, UBER) are rather used than traditional providers of the same services"* (Table 8). Respondents who have a personal monthly income from HRK 1,500 to HRK 3,3699 agree more with this statement, which means that they use "Sharing economy platforms (AirBnB, UBER) are rather used than traditional providers of the same services" more than those with a personal monthly income from HRK 14,001 to HRK 20,000.

The aforementioned test proved a statistically significant difference between the attitudes of the respondents of the group who *"I have no personal monthly income"* and those whose personal monthly income is "from HRK 8,501 to HRK 14,000" when it comes to variable 13 *("The ride-on-demand services are mostly used as forms of the sharing economy when it comes to shared mobility"*). Also related to these variables (variables 13 and 4) there is a statistically significant difference between the attitudes of the respondents of the group earning "From HRK 1,500 to HRK 3,369" and those with income "from HRK 8,501 to HRK 14,000". Detailed analysis indicates that respondents in the group "I have no personal monthly income" agree more with the stated statement compared to those with a personal monthly income "from HRK 8,501 to HRK 14,000". This indicates that they use "The ride-on-demand services (Uber, Bolt, etc)" more than the other mentioned group of respondents. Also, the respondents of the group that earns "From HRK 1,500 to HRK 3,369" agree more with the previously

mentioned statement in relation to those with personal monthly income "from HRK 8,501 to HRK 14,000".

The Kruskal-Wallis test related to testing variable 17 "On-demand professional transport services (Uber, Bolt, etc.) contribute to increasing traffic congestion and have a more negative environmental impact than public transportation" also indicates that there are statistically significant differences in attitudes between of those with the income of the group "I receive pocket money" compared to two groups: "from HRK 8,501 to HRK 14,000" and "more than HRK 20,000" (Table 8). Respondents with the income group "I receive pocket money" agree more with the previous statement compared to those respondents who belong to two groups, namely: "from HRK 8,501 to HRK 14,000" and "more than HRK 20,000". Therefore, they are more aware of environmental pollution by "On-demand professional transport services (Uber, Bolt, etc.)" (Table 8).

Table 8. Kruskal-Wallis test of statistically significant differences of using the sharing economy in relation to personal monthly income

VARIABLES	H	statistically significant difference in relation to age	sig.	age group between which there is a difference	p
The sharing economy is an excellent economic model based on sharing, lending, renting or exchanging products or services using web applications.	8,55	No	0,2865		
Various forms of the sharing economy when it comes to shared mobility (such as bike sharing, car sharing, ride sharing, e-scooter sharing, etc.) make extensive use.	**15,16**	**Yes**	**0,0341**	**5 and 8**	**0,043**
Sharing economy platforms (AirBnB, UBER) are rather used than traditional providers of the same services.	**18,12**	**Yes**	**0,0114**	**4 and 7**	**0,012**
Sharing economy platforms are cheaper than traditional providers of the same services.	3,30	No	0,8556		
Gaining confidence in sharing economy platforms only by recommendetions of someone known.	7,55	No	0,3743		
Using platforms, i.e. websites or mobile applications due to possibilities to order and pay for the use of a car, shared taxi or minibus.	7,32	No	0,3963		
The use of car sharing model allows to use a car without having to own it or worry about its traffic and maintenance.	13,53	No	0,0603		
The ride-on-demand services (Uber, Bolt, etc.) are mostly used as forms of the sharing economy when it comes to shared mobility.	**27,68**	**Yes**	**0,0003**	**1 and 6** **4 and 6**	**0,043** **0,000**
The ride-on-demand services (Uber, Bolt, etc.) are used because they replace the traditional taxi, but also public transportation and a private car.	12,60	No	0,0824		
On-demand professional transport services (Uber, Bolt, etc.) contribute to increasing traffic congestion and have a more negative environmental impact than public transportation.	**20,47**	**Yes**	**0,0046**	**2 with** **6 and 8**	**0,002** **0,042**

Source: Created by the author based on collected data

The Kruskal-Wallis test related to the testing of variable 18, "During the COVID-19 pandemic, public transport (city-suburban train, tram, bus, taxi) was usually used" indicates that there are statistically significant differences between the group of respondents "I receive pocket money " and three groups ("from HRK 3,700 to HRK 8,500", "from HRK 8,501 to HRK 14,000" "and more than HRK 20,000"). Also, the Kruskal-Wallis test related to the testing of these variables shows statistically significant differences between the group "Less than HRK 1,500" and two groups (from HRK 8,501 to HRK 14,000 and more than HRK 20,000). Namely, the respondents of the group "I receive pocket money" agree more with the above statement compared to those from the three groups ("from HRK 3,700 to HRK 8,500", "from HRK 8,501 to HRK 14,000" "and more than HRK 20,000"). Which indicates that they are During the COVID-19 pandemic, public transport (city-suburban train, tram, bus, taxi) was usually used" from the mentioned three groups of respondents. In the same way, respondents from the "Less than HRK 1,500" group agree more with the stated statement than those from the two groups (from HRK 8,501 to HRK 14,000 and more than HRK 20,000), and this points to the previous conclusion.

Furthermore, when it comes to the personal monthly income of the respondents, the Kruskal-Wallis test confirms that there is also a statistically significant difference between the groups "From HRK 1,500 to HRK 3,3699" and those "from HRK 14,001 to HRK 20,000" when it comes to variable 19 "During the COVID-19 pandemic, using public transport (city-suburban train, tram, bus, taxi) was avoided" (Table 9.). The analysis indicates that respondents who have a personal monthly income "from HRK 14,001 to HRK 20,000" agree more with the stated statement than those from the group "From HRK 1,500 to HRK 3,369". Which means that they are "During the COVID-19 pandemic, using public transport (city-suburban train, tram, bus, taxi) was avoided".

The Kruskal-Wallis test also confirms that there is a statistically significant difference between the respondents' attitudes "I receive pocket money" and those from the group from HRK 3,700 to HRK 8,500 when it comes to variable 20 "Due to the pandemic, attitudes towards using public transport (city-suburban train, tram, bus, taxi) have changed" (Table 9). Respondents from the group "I receive pocket money" agree more with the above statement than those from the group from HRK 3,700 to HRK 8,500.

Table 9. Kruskal-Wallis test of statistically significant differences of using the sharing economy related to COVID-19 in relation to personal monthly income

VARIABLES	H	statistically significant difference in relation to age	sig.	age group between which there is a difference	p
During the COVID-19 pandemic, public transport (city-suburban train, tram, bus, taxi) was usually used.	**25,38**	**Yes**	**0,0006**	**2 with 5,6,6** **3 with 6,8**	**0,027** **0,023** **0,042** **0,039** **0,029**
During the COVID-19 pandemic, using public transport (city-suburban train, tram, bus, taxi) was avoided.	**17,76**	**Yes**	**0,0131**	**4 and 7**	**0,049**
Due to the pandemic, attitudes towards using public transport (city-suburban train, tram, bus, taxi) have changed.	**17,76**	**Yes**	**0,0131**	**2 and 5**	**0,027**
Public transport (suburban train, tram, bus, taxi) will be used after the COVID-19 pandemic.	7,66	No	0,3636		
Beacuse of the health reasons, the use of a private car when traveling to work is increased.	10,77	No	0,1487		
Public transport in the Republic of Croatia meets European standards for the prevention and detection of specific pandemic risks.	15,92	**No***	**0,0259**		
Switching from a private vehicle to public transport results in a reduction of carbon dioxide.	4,96	No	0,6650		
Beacuse of the health reasons, the use of UBER, BOLT and similar companies that use the sharing economy as their business model have increased.	4,61	No	0,7071		
Switching from using UBER, BOLT and similar companies that use the sharing economy as their business model to using public transport results in a reduction of carbon dioxide	14,21	**No***	**0,0476**		

* on the basis of Post hoc test rejected sig.

Source: Created by the author based on collected data

By testing statistically significant differences between the variable education (variable 5) and all other variables (questions in the questionnaire) using the Kruskal-Wallis test, it was found that there is a statistically significant difference between the variable education and variables: 10, 18, 19, 21, 22 and the 23rd. The Kruskal-Wallis test related to the testing of variable 10 "Gaining confidence in sharing economy platforms only by recommendations of someone known" indicates that there are statistically significant differences between the group of respondents "no school education" and the two groups of education ("completed high school up to 3 years " and "student" (Table 10.) Namely, respondents from these two education groups ("completed high school up to 3 years" and "student") agree more with the statement *("Gaining confidence in sharing economy platforms only by recommendations of someone known"*) than those from the group "no school education"

Table 10. Kruskal-Wallis test of statistically significant differences of using the sharing economy in relation to education

VARIABLES	H	statistically significant difference in relation to age	sig.	age group between which there is a difference	p
The sharing economy is an excellent economic model based on sharing, lending, renting or exchanging products or services using web applications.	7,99	No	0,1569		
Various forms of the sharing economy when it comes to shared mobility (such as bike sharing, car sharing, ride sharing, e-scooter sharing, etc.) make extensive use.	8,41	No	0,1351		
Sharing economy platforms (AirBnB, UBER) are rather used than traditional providers of the same services.	9,32	No	0,0970		
Sharing economy platforms are cheaper than traditional providers of the same services.	4,05	No	0,5424		
Gaining confidence in sharing economy platforms only by recommendetions of someone known.	**15,03**	**Yes**	**0,0103**	**1 and 3,5**	**0,033 0,015**
Using platforms, i.e. websites or mobile applications due to possibilities to order and pay for the use of a car, shared taxi or minibus.	8,04	No	0,1539		
The use of car sharing model allows to use a car without having to own it or worry about its traffic and maintenance.	7,70	No	0,1736		
The ride-on-demand services (Uber, Bolt, etc.) are mostly used as forms of the sharing economy when it comes to shared mobility.	16,85	**No***	**0,0048**		
The ride-on-demand services (Uber, Bolt, etc.) are used because they replace the traditional taxi, but also public transportation and a private car.	5,21	No	0,3912		
On-demand professional transport services (Uber, Bolt, etc.) contribute to increasing traffic congestion and have a more negative environmental impact than public transportation.	19,15	**No***	0,0018		

* on the basis of Post hoc test rejected sig; Source: Created by the author based on collected data

Furthermore, when it comes to the education of the respondents, the Kruskal-Wallis test confirms that there is a statistically significant difference between the views of the respondents when it comes to variable 18 "During the COVID-19 pandemic, public transport (city-suburban train, tram, bus, taxi) was usually used" between the educational group "completed high school up to 3 years" and the group "completed high school up to 4 years or gymnasium". In relation to the same variables, a statistically significant difference was found between the attitudes of the respondents of the other two educational groups, those who belong to "completed high school up to 4 years or gymnasium" and those who "completed bachelor, college" (Table 11). A more detailed analysis indicates that respondents from the group "completed high school up to 4 years or gymnasium" agree more with the above statement compared to those from the group "completed high school up to 3 years" when it comes to "During the COVID-19 pandemic, public transport (city-suburban train, tram, bus, taxi) was usually used".

The Kruskal-Wallis test also confirms that there is a statistically significant difference between the attitudes of respondents from the educational group "completed high school up to 3 years" and the group "completed high school up to 4 years or gymnasium" when it comes to variable 19 ("During the COVID-19 pandemic, using public transport (city-suburban train, tram, bus, taxi) was avoided"). Related to the same variables, there is a statistically significant difference between the attitudes of respondents from the group "completed high school up to 4 years or gymnasium" and the other two groups ("student" and "completed bachelor, college") (Table 11). A more detailed analysis revealed that respondents from the educational group "completed high school up to 3 years" agree more with the above statement than those from the educational group "completed high school up to 4 years or gymnasium". It was also determined that the respondents of the educational groups ("student" and "completed bachelor, college") agree more with the same statement in relation to the views of the respondents of the "completed high school up to 4 years or gymnasium" group. So they are "During the COVID-19 pandemic, using public transport (city-suburban train, tram, bus, taxi) was avoided". The Kruskal-Wallis test also confirms that there is a statistically significant difference between the attitudes of respondents who belong to the student educational group and two other educational groups ("completed high school up to 3 years" and "completed high school up to 4 years or gymnasium") when it comes to variable 21" Public transport (suburban train, tram, bus, taxi) will be used after the COVID-19 pandemic. The conducted analysis indicates that respondents who belong to the educational groups ("completed high school up to 3 years" and "completed high school up to 4 years or gymnasium") agree more with the stated statement in relation to the student educational group. That is, they believe more that "Public transport (suburban train, tram, bus, taxi) will be used after the COVID-19 pandemic in relation to students". (Table 11). The Kruskal-Wallis test related to the testing

of variable 22 "Beacuse of the health reasons, the use of a private car when traveling to work is increased" indicates that there are statistically significant differences between the group of respondents of the educational group "student" and the two educational groups (finished primary school and completed high school up to 3 years) (Table 11).

A detailed analysis confirms that respondents from the educational group "student" agree more with the statement "Beacuse of the health reasons, the use of a private car when traveling to work is increased" compared to the other two educational groups (finished primary school and completed high school up to 3 years). The mentioned test also confirms that there is a statistically significant difference between the attitudes of the respondents of the educational group "completed high school up to 3 years" and "completed high school up to 4 years or gymnasium" when it comes to variable 23 ("Public transport in the Republic of Croatia meets European standards for the prevention and detection of specific pandemic risks") (Table 11). Namely, respondents from the educational group "completed high school up to 3 years" agree more with the statement ("Public transport in the Republic of Croatia meets European standards for the prevention and detection of specific pandemic risks") than respondents from the educational group " completed high school up to 4 years or gymnasium".

Table 11. Kruskal-Wallis test of statistically significant differences of using the sharing economy related to COVID-19 in relation to education

VARIABLES	H	statistically significant difference in relation to age	sig.	age group between which there is a difference	p
During the COVID-19 pandemic, public transport (city-suburban train, tram, bus, taxi) was usually used.	**18,56**	**Yes**	**0,0023**	**3 and 4** **4 and 6**	**0,002** **0,017**
During the COVID-19 pandemic, using public transport (city-suburban train, tram, bus, taxi) was avoided.	**23,49**	**Yes**	**0,0003**	**3 and 4** **4 and 5,6**	**0,002** **0,032** **0,012**
Due to the pandemic, attitudes towards using public transport (city-suburban train, tram, bus, taxi) have changed.	10,12	No	0,0719		
Public transport (suburban train, tram, bus, taxi) will be used after the COVID-19 pandemic.	**23,33**	**Yes**	**0,0003**	**5 and 3,4**	**0,016** **0,000**
Beacuse of the health reasons, the use of a private car when traveling to work is increased.	**15,69**	**Yes**	**0,0078**	**5 and 3,4**	**0,032** **0,001**
Public transport in the Republic of Croatia meets European standards for the prevention and detection of specific pandemic risks.	**15,32**	**Yes**	**0,0091**	**3 and 4**	**0,045**
Switching from a private vehicle to public transport results in a reduction of carbon dioxide.	4,94	No	0,4233		
Beacuse of the health reasons, the use of UBER, BOLT and similar companies that use the sharing economy as their business model have increased.	6,33	No	0,2754		
Switching from using UBER, BOLT and similar companies that use the sharing economy as their business model to using public transport results in a reduction of carbon dioxide	6,17	No	0,2896		

Source: Created by the author based on collected data

4.3. Limitations and future research

It is evident from the socio-demographic structure of the respondents that one should be careful when generalizing the data and drawing conclusions, because there is a large representation of women and the younger population in the sample. Likewise, the relatively small sample should be taken into account when interpreting the results.

The specific effects of sharing economy on sustainability are expected to stay unknown for quite a long period of time, despite calls for scientific analyses of these implications. Human knowledge continues to be insufficient for a number of reasons, both theory and practice. Future research must go into more detail about the new difficulties that the sharing economy presents for the Republic of Croatia.

5. CONCLUSION

It was understood quite a long time ago that it is necessary to change existing business practices (paradigms) and to design new ones in order to ensure development and often thus ensure survival itself. One of the newer business paradigms is the sharing economy. Today's lifestyle, both private and business, is characterized by the constant spatial mobility of people and the need for demand for different types of transportation. Public transport represents a vital pillar for economic development in many countries, and its social and ecological aspects are of great importance both for the individual and for the whole community. The activities affected by the sharing economy span almost five economic sectors and one of the most important sectors is related to peer-to-peer transportation services. This primarily refers to the activity of the sharing economy practiced by transport companies (Uber, Lyft, BlaBlaCar, etc.). The business concept of the sharing economy in public transport is developing more and more every day with all its specificities. Especially in the last few years, car sharing has become popular. Today, it is completely clear that the Covid-19 crisis (pandemic) has shown everyone, and confirmed once again, the great importance and meaning of public transport when it comes to ensuring mobility from the aspect of its availability and continuity (UITP, 2020). The emergence of the COVID-19 pandemic has led to certain changes in people's habits regarding the use of public transport. The risk associated with the infection with the COVID-19 virus, the necessity of social distance, as well as isolation have led to changes in people's previous habits when it comes to public transport, but to a greater use of shared mobility. Numerous indicators indicate that the sharing economy in public transport, with the help of its strong flexibility as a market model, has adapted extremely well to the economic crisis caused by the COVID-19 pandemic. Consequently, this

thesis investigated the attitudes of users in the Republic of Croatia when it comes to the sharing economy as a business model used in public transport during the COVID-19 pandemic.

From the obtained results of the conducted empirical research, it can be concluded that the respondents are familiar with the concept of the sharing economy. The vast majority, i.e. 83.75% of respondents are familiar with the term sharing economy and what is more important, 52.81% of them use different forms of public transport companies (UBER, BOLT, etc.) that use the business model of digital platforms of the sharing economy. It is also evident that the respondents are aware of more favorable prices related to the business model of the sharing economy in public transport. As many as 63.44% of respondents do so because of lower prices compared to the same forms of classic public transport. They consider these lower prices to be a distinct advantage of this business model.

The results of the conducted empirical research in the Republic of Croatia show that the respondents prefer to use digital platforms of the sharing economy in transport compared to conventional forms of public transport. From the results of the translated research, 65.01% of the respondents prefer to use different forms of public transport companies (UBER, BOLT, etc.) that use the business model of digital platforms of the sharing economy, rather than classic forms of public transport (taxi, bus, etc.). This confirms the awareness of replacing conventional forms of public transport with those that use digital platforms of the sharing economy in transport. The results of the conducted research indicate that respondents are aware of the advantages of ordering and paying for rides through digital platforms of the sharing economy in public transport. Namely, 67.82% of respondents claim that they use digital platforms of the sharing economy in public transport because they enable them to order and pay for services in public transport.

The analysis of the results of the empirical research clearly shows that the respondents will not stop using public transport companies that use the business model of digital platforms of the sharing economy (UBER, BOLT) and that they will not switch to conventional forms of public transport, since conventional forms of public transport pollute the environment less with carbon dioxide emissions. Likewise, the results of empirical research indicate that respondents will not stop using a private car for the same reason and will not switch to using public transport. Everything indicates that the respondents will not change their decisions regarding the use of public transport in order to reduce environmental pollution with carbon dioxide emissions.

It is also evident from the obtained results that they do not use public transport companies that use the business model of digital sharing economy platforms (UBER, BOLT) for health reasons. Namely, according to the results of the conducted research, it follows that the COVID-19 pandemic is not the

reason for the use of companies in public transport that use the business model of digital platforms of the sharing economy. The obtained results show that 56.56% of respondents avoided using public transport during the COVID-19 pandemic. The results of the conducted empirical research indicate the uncertainty of the use of public transport after the COVID-19 pandemic. Only 41.88% of respondents stated that they would use public transport after the COVID-19 pandemic. Namely, 60.01% of the respondents stated that they changed their attitude about the use of public transport during the COVID-19 pandemic. Among other things, empirical research shows that on average, in almost all variables, women agree more with the statements in the questionnaire than men, and in variables (questions from the questionnaire) 11, 14, 20, 24 and 25, there is a statistically significant difference in their attitudes compared to the attitudes of men.

REFERENCES

1. Abrate, G., Viglia, G. (2019). Personal or product reputation? Optimizing revenues in the sharing economy. *Journal of Travel Research*, *58*(1), pp. 136–148
2. Andersson, L., Gläfke, L., Möller, T., Schneiderbauer, T. (2020.) *Why shared mobility is poised to make a comeback after the crisis. Mc Kinsey Center for Future Mobility,* online: https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/why-shared-mobility-is-poised-to-make-a-comeback-after-the-crisis, accessed (17.06.2022.)
3. Ardila-Gomez, A., (2020) *In the fight against COVID-19, public transport should be the hero, not the villain,* online: https://blogs.worldbank.org/transport/fight-against-covid-19-public-transport-should-be-hero-not-villain, accessed (26.6.2022)
4. Basselier, R., Langenus, G., Walravens, L. (2018.) *Peer-to-peer business model of the sharing economy, The rise of sharing economy,* online: https://www.nbb.be/doc/ts/publications/economicreview/2018/ecoreviii2018_h3.pdf, accessed (13.05.2022.)
5. Belk, R. (2014). You are what you can access: Sharing and collaborative consumption online, *Journal of Business Research*, *67*(8), pp. 1595-1600.
6. Benjaafar, S., Bernhard, H., Courcoubetis, C., Kanakakis, M., Papafragkos, S. (2022). Drivers, riders, and service providers: The impact of the sharing economy on mobility. *Management Science*, *68*(1), pp. 123-142.
7. Bradhi, F. Eckhardt, M., G. (2012). Access-Based Consumption: The Case of Car Sharing. *Journal of Consumer Research*, *39*(4), pp. 881–898.

8. Böcker, L., Meelen, T., (2016). Sharing for people, planet or profit? Analysing motivations for intended sharing economy participation. *Environmental Innovation and Societal Transitions, 23*(June), pp. 28-39.
9. Botsman, R. (2013). *Fact Company, The sharing economy lacks a shared definition*, online: https://www.fastcompany.com/3022028/the-sharing-economy-lacks-a-shared-definition, (22. 06. 2022)
10. Botsman, R., Rogers, R. (2010). *What's mine is yours. The Rise of Collaborative Consumption*, New York: Harper Collins.
11. Barabino, B., Lai, C., Olivo, A. (2020). Fare evasion in public transport systems: a review of the literature. *Public Transport, 12*(1), pp. 27-88.
12. Bissell, D. (2010). Passenger mobilities: affective atmospheres and the sociality of public transport. *Environment and Planning D: Society and Space, 28*(2), pp. 270-289.
13. Brčić, D., Ševrović, M. (2012). *Logistika prijevoza putnika*, Zagreb: Faculty of Transport and Traffic Sciences Zagreb.
14. Brozović, V., Hrastić, F., Meštrović, L., Bilić, H., Naletina, D., Petljak, K. (2019). Ekonomija dijeljenja: Poslovni model budućnosti. *Zbornik Ekonomskog fakulteta u Zagrebu, 17*(1), pp. 33-61.
15. Burns J., Movsisyan A., Stratil J.M., Coenen M., Emmert-Fees K.M.F., Geffert Rehfuess E. (2020.) Travel-related control measures to contain the COVID-19 pandemic: a rapid review. *Cochrane Database of Systematic Review*, Issue 9. Art. No.: CD013717.
16. Cohen, B., Kietzmann, J. (2014). Ride on! Mobility business models for the sharing economy. *Organization & Environment, 27*(3), pp. 279-296.
17. Cohent, M., Sundararajan, A. (2015) *Self-Regulation and Innovation in the Peer-to-Peer Sharing Economy.* Online: http://chicagounbound.uchicago.edu/uclrev_online/vol82/iss1/8, accessed (14.06.2022)
18. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and The Committee of The Regions, *A Digital Single Market Strategy for Europe,* Brussels, COM (2015) 192 final (The Digital Single Market Strategy).
19. The Communication from the Commission to the European Parliament, the Council, the European Economic and Social Council and the Council of the Regions, *Online Platforms and the Digital Single Market Opportunities and Challenges for Europe*, COM (2016) 288 final, Brussels,
20. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, *The mid-term review of the*

implementation of the Digital Single Market Strategy (Digital Single Market for All) (Brussels, COM (2017) 228 final.

21. The Communication from the Commission to the European Parliament, the Council, the EuropeanEconomic and Social Committee and the Committee of the Regions, *Creating a Common EuropeanData Space*, (COM (2018) 232 Final Brussels.
22. Crozet, Y., Santos, G., Coldefy, J. (2019.) Shared Mobility, MaaS and the Regulatory Challenges of Urban Mobility. Brussels: Centre on Regulation in Europe CERRE. Online: https://cerre.eu/wp-content/uploads/2020/07/190827_CERRE_MaaS_FinalReport.pdf, accessed (22.06.2022).
23. Curtis, S., K., Lehner, M. (*2019).* Defining the Sharing Economy for Sustainability. *Sustainability, 11*(3), 567.
24. Chica-Olmo, J., Gachs-Sánchez, H., Lizarraga, C. (2016). Route effect on the perception of public transport services quality, *Transport Policy*, 67(September), pp. 40-48.
25. Drahokoupil, J., and Fabo, B., 2016. '*The Platform Economy and the Disruption of the Employment Relationship.'* ETUI Policy Brief No. 5. online: https://www.researchgate.net/publication/318006528_The_Platform_Economy_and_the_Disruption_of_the_Employment_Relationship, accessed (10.05.2022.)
26. Dumančić, K., Avlona, N., R. (2022). The Regulatory Context and Legal Evolution: The Cases of Airbnb and Uber. In: Česnuitytė, V., Klimczuk, A., Miguel, C., Avram, G. (Eds.). *The Sharing Economy in Europe*, Cham: Palgrave Macmillan.
27. Dumančić, K., Čeh Časni, A., (2021) The State of the Sharing Economy in Croatia: Legal Framework and Impact on Various Economic Sectors. In Klimczuk, A., Česnuitytė, V., Avram, G. (Eds.). *The Collaborative Economy in Action: European Perspectives* (pp. 90–99). Limerick, Ireland: University of Limerick.
28. Eisenmann, C., Nobis, C., Kolarova, V., Lenz, B., Winkler, C. (2021). Transport mode use during the COVID-19 lockdown period in Germany: The car became more important, public transport lost ground, *Transport policy, 103*(March), pp. 60-67.
29. Echikson, W. (2020.) *'Europe's Collaborative Economy Charting a Constructive Path Forward.'* Centre for European Policy Studies (CEPS), CEPS Task Force Report, Brussels.
30. European Commission (2020.) *Walking and Cycling as Transport Modes Mobility and Transport.* online: https://ec.europa.eu/transport/road_safety/specialist/knowledge/pedestrians/pedestrians_and_cyclists_unprotected_road_users/walking_and_cycling_as_transport_mod es_en, accessed (07.05.2022).

31. European Commission (2019.) *Transport in the European Union Current Trends and Issues. Brussels: European Commission, Directorate-General Mobility and Transport.* online: https://ec.europa.eu/transport/sites/transport/files/2019-transport-in-the-eu-current-trends-and-issues, (03.06.2022).
32. European Commission (2016.). *A European Agenda for the collaborative economy*, Brussels, online: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2016%3A356%3AFIN, accessed (23.06.2022).
33. European Commission (2016.). *Staff Working Document 'European Agenda for the Collaborative Economy—Supporting Analysis*,' SWD. 2016b. 184 final. Online: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016SC0184&from=EN, accessed (17.07.2022).
34. European Commission. (2016.). *Communication to the European Parliament, the Council, the European Economic and Social Council and the Council of Regions: European Agenda for the Collaborative Economy,* (2016. a) 356, Brussels. Online: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52016DC0356&from=EN, accessed (17.07.2022)
35. Eurostat. 2020. Eurostat Regional Yearbook. Luxembourg: Publications Office of the European Union. https://ec.europa.eu/eurostat/web/products-statistical-books/-/ks-ha-20-001 accessed (30.06.2022).
36. European Commission (2018). *Study to Monitor the Economic Development of the Collaborative Economy at sector level in the 28 EU Member States*. Final Report. https://op.europa.eu/en/publication-detail/-/publication/0cc9aab6-7501-11e8-9483-01aa75ed71a1, accessed (12.07.2022).
37. The Communication from the Commission to the European Parliament, the Council, the European Economic and Social Council and the Council of the Regions: Online Platforms and the Digital Single Market Opportunities and Challenges for Europe (COM 2016) 288 final, Brussels, online: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016DC0288&from=EN, accessed (18.06.2022).
38. Francetic I., Munford L. (2021) Corona and Coffee on your commute: a spatial analysis of COVID-19 mortality and commuting flows in England in 2020. *European Journal of Public Health*, 31(4), pp. 901–907.
39. Frechette, M. (2016). *Peer-to-peer collaborative consumption, social distance, and the extended self*, Doctoral dissertation, Saint Louis University.
40. Frenken, K., Schor, J. (2019). Putting the sharing economy into perspective. In *A research agenda for sustainable consumption governance*, Edward Elgar Publishing.

41. Gartland, N., Fishwick, D., Coleman, A., Davies, K., Hartwig, A., Johnson, S., & van Tongeren, M. (2022). *Transmission and control of SARS-CoV-2 on ground public transport: A rapid review of the literature up to May 2021*. *Journal of transport & health*, 26,101356. online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8894738/ accessed (04.07.2022)
42. Gobble, M., M. (2017). Defining the Sharing Economy. *Research-Technology Management*, *60*(2), pp. 59-63.
43. Gössling, S., Scott, D., Hall, C. M. (2020). Pandemics, tourism and global change: a rapid assessment of COVID-19. *Journal of Sustainable Tourism*, pp. 1-20.
44. Hossain, M. (2021). The effect of the Covid-19 on sharing economy activities. *Journal of Cleaner Production*, *280*(1), pp. 280-288.
45. Ivandić, N., Vidović, K. (2020). *T*ourism as a Factor of Demand in Public Road Passenger Transportation in the Republic of Croatia, *Tehnički glasnik, 14*(1), pp. 76-87.
46. Jin, S. T., Kong, H., Wu, R., Sui, D. Z. (2018). Ridesourcing, the sharing economy, and the future of cities, *Cities*, *76*(June), pp. 96-104.
47. Kalašova, A., Harantova, V., Čulik, K. (2019). Public Transport as a Part of Shared Economy. *The Archives of Automotive Engineering – Archiwum Motoryzacji*, *85*(3).
48. Koen, F., and Schor, J., (2019). *Putting The Sharing Economy Into Perspective*. In Mont, O. (Ed.). *A Research Agenda for Sustainable Consumption Governance* (pp. 121-135), UK: Edward Elgar Publishing.
49. Kral, P., Janoskova, K., Kliestik, T. (2018). Key determinants of the public transport user's satisfaction, *Administratie si Management Public*, No. 31, pp. 36-51.
50. Lock, O., (2020.) *Cycling Behaviour Changes as a Result of COVID-19: A Survey of Users in Sydney, Australia, Findings*, online, https://findingspress.org/article/13405-cycling-behaviour-changes-as-a-result-of-covid-19-a-survey-of-users-in-sydney-australia. Accessed (26.06.2022.)
51. Lukasiewicz, A., Sanna, V.S., Diogo, V.L.A.P., Bernát, A. (2022). Shared Mobility: A Reflection on Sharing Economy Initiatives in European Transportation Sectors. In: Česnuitytė, V., Klimczuk, A., Miguel, C., Avram, G. (eds) *The Sharing Economy in Europe*. Palgrave Macmillan, Cham.
52. Machado, Soares, C., Marie de Salles Hue, N. P., Berssaneti, F.T., Quintanilha, J. A. (2018.) 'An Overview of Shared Mobility.' Sustainability (Switzerland) *10*(12), pp. 1–21.
53. Manyika, J., Lund, S., Bughin J., Robinson, K., Mischke, J., Mahajan, D. (2016). *McKinsey Global Institute, Independent work: Choice, necessity, and the gig Economy,* online: https://www.mckinsey.com/featured-insights/employment-and-growth/independent-work-choice-necessity-and-the-gig-economy, accessed (22.06.2022).

54. Möhlmann, M. (2015). Collaborative consumption: determinants of satisfaction and the likelihood of using a sharing economy option again. *Journal of Consumer Behaviour*, *14*(3), pp. 193–207 -
55. Mouratidis, K., Peters, S., Van Wee, B. (2021). Transportation technologies, sharing economy, and teleactivities: Implications for built environment and travel. *Transportation Research Part D* 92, 102716.
56. Munkøe, M., M. (2017). Regulating the European Sharing Economy: State of Play and Challenges. *Intereconomics*, *52*(1), pp. 38-44.
57. Mulley, C., Nelson, J. D. (2009). Flexible transport services: A new market opportunity for public transport, *Research in Transportation Economics*, *25*(1), pp. 39-45.
58. Naletina, D., (2021) *Public transportation during the COVID-19 pandemic in the city of Zagreb. InterEULawEast: journal for the international and european law, economics and market integrations*, *8*(2), pp. 29-51.
59. Naletina, D., Vrkljan, M., Jurčević, M., (2020.) *Consumer satisfaction with the organization of public transport during the corona crisis,* In: Baković, T., Naletina, D., Petljak, K. (Eds.) *Proceedings of The International Scientifi*c *Conference,* Zagreb: Ekonomski fakultet & Hrvatska gospodarska komora, pp. 159-183.
60. Naletina, D., Butigan, N., Rajič, A. (2019.) *Passenger's satisfaction with the public transportation service in the city of Zagreb,* In: Baković, T., Naletina, D., Petljak, K. (Eds.) *Proceedings of The International Scientifi*c *Conference,* Zagreb: Ekonomski fakultet & Hrvatska gospodarska komora, pp. 239-251.
61. Phillips, S. (2019.) Carsharing Market & Growth 2019. 'Car-Sharing Industry, Movmi, Carsharing Industry: Carsharing Market & Growth 2019, online: https://movmi.net/blog/carsharing-market-growth-2019/ accessed (01.07.2022).
62. Proposal for a Regulation of the European Parliament and of the Council on a Single Market for Digital Services and amending Directive 2000/31/EC, COM/2020/825 final (Digital Services Act). Online: https://ec.europa.eu/info/sites/default/files/proposal_for_a_regulation_on_a_single_market_for_digital_services.pdf, accessed (01.07.2022).
63. Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector COM/2020/842 final, (Digital Markets Act). online: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020PC0842&rid=8,accessed (02.05.2022).

64. Pullano, G., Di Domenico, L., Sabbatini, C.E. (2021.) *Underdetection of cases of COVID-19 in France threatens epidemic control.* Nature 590, 134–139. https://doi.org/10.1038/s41586-020-03095-6, accessed (18.05.2022).
65. Puschmann, T., Alt, R. (2016). Sharing Economy, *Business & Information Systems Engineering*, *58*(1), pp. 93-99.
66. PwC, (2016). *Assessing the size and presence of the collaborative economy in Europe*, online: https://op.europa.eu/en/publication-detail/-/publication/2acb7619-b544-11e7-837e-01aa75ed71a1, accessed (25.06.2022).
67. PwC, (2017). *Share Economy* 2017: The New Business Model, online: https://sharingcitiesalliance.knowledgeowl.com/help/pwc-share-economy-2017-the-new-business-model, accessed (13.06.2022).
68. *Regulation EU (2019) (2019/1150) of the European Parliament and of the Council of 20 June 2019 on promoting fairness and transparency for business users of online intermediation services*, online: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32019R1150 accessed (14.06.2022).
69. Rotaris, L., Danielis, R., (2018). The role for carsharing in medium to small-sized towns and in less-densely populated rural areas. *Transportation Research Part A: Policy and Practice*, 115, pp. 49-62.
70. Rodenbach, J., Mathis, J., Chicco, A., Diana, M., Wells, P., Beccaria, S. (2018). *'Car Sharing in Europe: A Multidimensional Classification and Inventory.'* Deliverable D2.1, Research and Innovation action H2020-MG-2016–2017, Shared Mobility Opportunities and Challenges foR European Cities.
71. Schor, J. (2016). Debating the Sharing Economy, *Journal of Self-Governance and Management Economics*, *4*(3), pp. 7–22.
72. Sousa Ferro, M., (2019). Uber Court: a look at recent sharing economy cases before the CJEU, *UNIO – EU Law Journal*, *5*(1), pp. 68-75.
73. Sundararajan, A. (2013). *From Zipcar to Sharing Economy*, Harvard Business Review, online: https://hbr.org/2013/01/from-zipcar-to-the-sharing-eco, accessed (19.05.2022).
74. Standing, C., Standing, S., Biermann, S. (2018). *The implications of the sharing economy for transport.* Transport Reviews,. online : https://www.researchgate.net/publication/323671737_The_implications_of_the_sharing_economy_for_transport. accessed(19.05.2022).

75. Stelzer, A., Englert, F., Hörold, S., Mayas, C. (2016). Improving service quality in public transportation systems using automated customer feedback. *Transportation Research Part E: Logistics and Transportation Review*, Vol. 89, pp. 259-271.
76. Schmöcker, J. D., Bell, M. G., Lam, W. H. (2010). Importance of public transport, *Journal of Advanced Transportation*, *38*(1), pp. 1-14.
77. Smith, A. (2016). Shared, Collaborative and On Demand: The New Digital Economy, Pew Research Center, online, http://www.pewinternet.org/2016/05/19/ the-new-digital-economy/ accessed (25.06.2022).
78. Stjernborg, V., Mattisson, O. (2016). The Role of Public Transport in Society—A Case Study of General Policy Documents in Sweden, *Sustainability*, *8*(11), pp. 1-16,
79. Thelen, K., (2018). Regulating Uber: The Politics of the Platform Economy in Europe and the United States. *Perspectives on Politics*, *16*(4), pp. 938–953.
80. Vičević, D., Hess, S. (2013). Analiza potražnje za javnim linijskim prijevozom u Republici Hrvatskoj. *Pomorski zbornik*, *47*(1), pp. 159-168.
81. Sekaran, U. (2000). *Research for Business: A Skill-Building Approach,* John Wiley.
82. Shaheen, S., Chan, N., Bansal, A., Cohen, A. (2015.) *Shared Mobility:* A Sustainability & Technologies Workshop: Definitions, Industry 112 A. Lukasiewicz et al. Developments, and Early Understanding. Berkley, CA: University of California. https://escholarship.org/uc/item/2f61q30s, accessed (30.06.2022.).
83. UITP, (2020). Public Transport After The Coronavirus Pandemic, online: https://www.uitp.org/topics/covid-19/, accessed (02.06.2022).
84. Zervas, G., Proserpio, D., Byers. J., W. (2017). The Rise of the Sharing Economy: Estimating the Impact of Airbnb on the Hotel Industry, *Journal of Marketing Research*, *54(*5), pp. 687-705.

LIST OF TABLES

LIST OF GRAPHS

ATTACHMENT: SURVEY QUESTIONNAIRE

1. Gender:

- Male
- Female

2. Age:

- 18-25
- 26-35
- 36-45
- 46-55
- 55-65,
- 65+.

2. Work status:

- employed
- in a permanent employment relationship
- employed; for a certain period of time
- I work part-time
- student - I work through the student service (SC)
- student - I don't work
- self-employed
- unemployed
- I work through the pupil service.

3. Personal monthly income:

- I have no personal monthly income
- I receive pocket money
- Less than HRK 1,500
- from HRK 1,500 to HRK 3,699
- from HRK 3,700 to HRK 8,500
- from HRK 8,501 to HRK 14,000
- from HRK 14,001 to HRK 20,000

- more than HRK 20,000.

4. Education:
    - no school education
    - finished primary school
    - completed high school up to 3 years
    - completed high school up to 4 years or gymnasium
    - student, completed bachelor
    - college completed master's degree
    - PhD.

Please rate the following statements on a scale from 1-5, with 1 being strongly agree and 5 being strongly disagree.

6. The sharing economy is an excellent economic model based on sharing, lending, renting or exchanging products or services using web applications that make sharing things simple, flexible and fast.

7. I make extensive use of various forms of the sharing economy when it comes to shared mobility (such as bike sharing, car sharing, ride sharing, e-scooter sharing, etc.).

8. I use sharing economy platforms (AirBnB, UBER) rather than traditional providers of the same services.

9. I use sharing economy platforms because they are cheaper than traditional providers of the same services.

10. I gain confidence in sharing economy platforms only when someone I know recommends them to me.

11. I use platforms, i.e. websites or mobile applications, which allow me to order and pay for the use of a car, shared taxi or minibus. (1) Strongly agree; (2) Agree; (3) Neither agree nor disagree; (4) Disagree; (5) Strongly disagree

12. I use the car sharing model since it allows me to use a car without having to own it or worry about its traffic and maintenance.

13. I mostly use ride-on-demand services (Uber, Bolt, etc.) as forms of the sharing economy when it comes to shared mobility.

14. I use ride-on-demand services (Uber, Bolt, etc.) because it replaces the traditional taxi, but also public transportation and a private car.

15. Why do you use ride-on-demand services (Uber, Bolt, etc.)?

- Because of more favorable prices
- Due to vehicle availability, For greater comfort
- Due to more accessible drivers
- Due to the possibility of evaluating the service
- Due to the possibility of cashless payment
- Because of a greater sense of security
- Due to the ease of use of the application
- Due to the possibility of using the application
- Other.

15. How often do you use ride-on-demand services (Uber, Bolt, etc.)?

- Several times a day
- Once a day
- Several times a week
- Once a week
- Exclusively on weekends
- Once or twice a month
- Very rarely (a couple of times a year)
- Other.

Please rate the following statements on a scale from 1-5, with 1 being strongly agree and 5 being strongly disagree.

17. On-demand professional transport services (Uber, Bolt, etc.) contribute to increasing traffic congestion and have a more negative environmental impact than public transportation.

18. During the COVID-19 pandemic, I usually used public transport (city-suburban train, tram, bus, taxi).

19. During the COVID-19 pandemic, I avoided using public transport (city-suburban train, tram, bus, taxi).

20. Due to the pandemic, my attitudes towards using public transport (city-suburban train, tram, bus, taxi) have changed.

21. I will use public transport (suburban train, tram, bus, taxi) after the COVID-19 pandemic.

22. Beacuse of the fear for my health, I increasingly use a private car when traveling to work.

23. Public transport in the Republic of Croatia meets European standards for the prevention and detection of specific pandemic risks.

24. In order to reduce carbon dioxide pollution, I will stop using a private vehicle and will switch to using public transport.

25. Beacuse of the fear for my health, I increasingly use UBER, BOLT and similar companies that use the sharing economy as their business model.

26. In order to reduce carbon dioxide pollution, I will stop using UBER, BOLT and similar companies that use the sharing economy as their business model and will switch to using public transport.

BIOGRAPHY

Barbara Kovač was born on April 21, 1998 in Zagreb (Croatia). She graduated from the VI High School in Zagreb in 2017. In the same year, she enrolled in the undergraduate study of Business Economics at the Faculty of Economics in Zagreb. In 2021, she enrolled in the university graduate study of Business Economics, majoring in Trade and International Business, at the Faculty of Economics in Zagreb and she actively uses English. After obtaining the diploma, she wants to complete the PhD program abroad and further improve herself.