

Consumer Behaviour in the Shared Accommodation Sector: Revealing the Performance in Slovakia

Denis Juracka ¹, Marek Nagy ², Katarina Valaskova ^{3,*}

¹ University of Zilina, Slovak Republic
ORCID: 0009-0005-5741-185X
e-mail: denis.juracka@stud.uniza.sk

² University of Zilina, Slovak Republic
ORCID: 0000-0003-0740-6268
e-mail: marek.nagy@uniza.sk

³ University of Zilina, Slovak Republic
ORCID: 0000-0003-4223-7519
e-mail: katarina.valaskova@uniza.sk

* Corresponding author: Katarina Valaskova, katarina.valaskova@uniza.sk

Abstract

Over the past few decades, globalisation, digitalisation, and social transformation have fostered the emergence of the sharing economy as a new economic model. This article examines consumer behaviour in the Slovak sharing economy, with a particular emphasis on the accommodation sector. The main objective of the study is to map consumer behaviour in the area of the sharing economy in the Slovak Republic and to determine the factors influencing this consumer behaviour in the accommodation sector. A questionnaire survey of 385 respondents was used to conduct quantitative research, with statistical validation using Pearson's test and a proportional agreement test. According to the findings, the majority of consumers, particularly those in the younger and higher income groups, have positive experiences with shared accommodation platforms. The most influential elements in accommodation selection were found to be price, location, and user reviews. From a theoretical approach, the study contributes to the small body of research on sharing economy adoption in smaller European Union countries, highlighting the relevance of socioeconomic considerations in shaping consumer preferences. In managerial terms, the research underlines the need for platforms to improve trust, openness, and flexibility, particularly in terms of service quality and cancellation rules. Furthermore, the findings emphasise the need to increase public knowledge of the benefits of the sharing economy through focused media efforts and government backing. The study's novelty stems from its contextual focus on Slovakia and its integration of consumer satisfaction data with strategic recommendations for sustainable tourism development and regulatory legislation.

Key words

sharing economy, collaborative economy, travelling, shared accommodation.

Cite as:

Juracka, D., Nagy, M., & Valaskova, K. (2025). Consumer Behaviour in the Shared Accommodation Sector: Revealing the Performance in Slovakia. *Forum Scientiae Oeconomia*, 13(4), 82–97. https://doi.org/10.23762/FSO_V_OL13_NO4_4

Received: 23 November 2024

Revised: 20 July 2025

Accepted: 28 October 2025



Copyright: © 2025 by the authors. For open-access publication within the terms and conditions of the Creative Commons Attribution (CC BY) licence (<https://creativecommons.org/licenses/by/4.0/>).

Introduction

In the 21st century, the rapid and dynamic development of the economy, as well as innovative business models, is evident. One important factor that affects how well a corporation performs is managerial decision-making (Kostrzewski et al., 2023). Typically, prevailing business models are for companies to produce goods or provide services that customers buy. Companies have started to invest more in the development of sustainable products and sustainable sourcing, according to the argument that customers today are drawn to sustainable products (Vatamanescu et al., 2021). The concept of

Corporate Social Responsibility (CSR) is gaining traction and is becoming increasingly relevant (Belas, 2023). In recent years, notable examples have emerged demonstrating efforts to tackle environmental, social, and economic challenges (Metzker, 2024). The traditional way of doing business has been complemented by a nontraditional business model that no longer emphasises ownership but rather the use of a product. In this model, goods or services are shared and rented by customers instead of being bought. There are countless examples of sharing products or services that have been around for some time. Nevertheless, with the advent of the Internet, telecommunications technologies, and online platforms, a new economic model called the sharing economy is emerging. This phenomenon is constantly gaining popularity and is becoming another pillar of the current economic transformation. The sharing economy is changing the way people create value, use resources, and trade services and goods. The paper is devoted to the analysis of consumer behaviour in the context of the sharing economy. This study is important in view of the ever-evolving dynamic economic environment, changing consumer preferences, and pressure for conventional service delivery. This study thus tries to point out these changes and find out to what extent consumers in the territory of the Slovak Republic accept this economic model. The sharing economy, which is becoming increasingly important in the current economic environment, brings new challenges and opportunities for consumers.

The main goal of this paper is to analyse the impact of the sharing economy on consumer decision-making and their preferences. In addition, the work is aimed at examining the level of awareness of this concept and the extent to which the shared economy in the accommodation sector is implemented on the territory of the Slovak Republic. The authors used a questionnaire survey to fulfil the goal of this study. Based on the data collected using a questionnaire survey, it was possible to analyse the facts found using mathematical and statistical methods.

Although there has been a growing interest in the sharing economy among academicians, there has been a lack of attention paid to the ways in which consumer behaviour develops in smaller EU economies that have emerged from the transition, such as Slovakia. The purpose of this study is to fill this gap by investigating the elements that play a significant role in decision-making, the levels of satisfaction, and the function that socio-demographic variables have in determining platform adoption. In doing so, it adds not only empirical insights from a setting that is underrepresented but also theoretical views on the applicability of models that are already in existence. The findings are anticipated to contribute to the advancement of academic debate as well as the practical strategies of stakeholders that are working towards the development of platform-based services that are both inclusive and sustainable. Although existing literature provides a variety of conceptual frameworks for collaborative consumption and the sharing economy (Botsman & Rogers, 2010), the majority of studies focus on Western European or worldwide markets. There is a scarcity of context-specific research focusing on minor Central and Eastern European countries such as Slovakia. According to Rathnayake et al. (2024) and Haqqani et al. (2022), the geographical gap hinders the broader applicability of theoretical models, particularly in nations where regulatory regimes and digital infrastructures are still growing. This study helps to bridge that gap by bringing sharing economy theoretical constructs, such as non-ownership consumption models, digital adoption behaviour, and trust-based decision-making to the Slovak environment. This research aims to extend the present conversation by investigating how consumer preferences align with (or deviate from) popular models. The findings add to current ideas by emphasising the importance of local knowledge, institutional preparation, and cultural factors in influencing involvement in the sharing economy.

The paper is divided as follows. The literature review section presents the current level of knowledge and describes the importance of the sharing economy, the sectors, and the benefits and risks of using this innovative type of economy. The methodology section delineates the procedure for conducting a questionnaire survey, as well as a description of the use of statistical verification of established hypotheses. The results describe the development of the sharing economy in the accommodation sector in the context of the COVID-19 pandemic, based on the results of a

questionnaire survey that was carried out in the Slovak Republic. Subsequently, in this section there is also a description of the results of the statistical verification by means of Pearson's χ^2 square test. The discussion section focuses on comparable studies conducted in this field. Finally, a summary of important findings and impending challenges and limitations that directly affect the research are presented in the conclusion section.

1. Literature review

The industrial production sector has seen significant transformations throughout the last few centuries, leading to significant effects on businesses and people's means of subsistence. The concepts of the three previous industrial revolutions served as the cornerstones for the concept of Industry 4.0, with the effects of one revolution on the other (Valaskova et al., 2024). Nowadays, digitisation is coming to the fore. Businesses now more than ever need to battle for their survival or market position in the dynamic and complex business environment of today, which is under the most pressure it has been in the past ten years due to the pandemic and other conflicts that have severely disrupted the economy (Gajdosikova et al., 2024a). The rate of change is unparalleled in terms of society, education, employment, and most crucially, production (Nagy et al., 2023). Globally, digitalisation and the ensuing digital divide are significant concerns affecting socioeconomic progress (Kovac et al., 2024). Globally, digitalization and the ensuing digital divide are significant concerns affecting socioeconomic progress (Kovac et al., 2024). In every country's economy, industry's main purpose is to process and turn natural resources into finished and semi-finished goods (Gajdosikova et al., 2024b). Business and economic management require large data and integrated enterprise output (Kliestik et al., 2024).

Currently, there is no clear and universal definition of the sharing economy that can be considered decisive. The authors Felson and Spaeth (1978) were the first to try to define the sharing economy and coined the term collaborative consumption for this designation. According to these authors, the prerequisites for collaborative consumption are the existence of assets (or services) and the willingness of the provider to mediate products or services for another consumer. Botsman and Rogers (2010) argue that the sharing economy as we know it today began to develop with the growth of the modern Internet in the late 1990s. During this period, online platforms also began to emerge, which enabled individuals to share various products, goods, or services. The sharing economy has progressed from an emerging business phenomenon to a widely implemented business practice in the modern economy. It enables more efficient use of resources by helping people share equipment, such as cars and bikes, and allows access to equipment that an individual may not be able to afford. In theory, they include the key features of a sustainable business model. If consumers switch from buying products to using products, this should have a positive impact on the financial, environmental, and social dimensions of sustainability.

There are many sectors in which online platforms mediate the connection between providers and customers of goods and services. The accommodation sector of the shared economy represents a modern approach to the provision and use of accommodation services. Platforms in the accommodation sector connect hosts with guests. The provider of accommodation can be a private owner of apartments, flats, or rooms, but it can also be a legal entity such as a boarding house. This approach provides an opportunity for hosts to use their existing spaces, whether they are spare rooms or entire unused apartments, and turn them into a source of profit (Kostkova, 2020). This model enables a direct connection between hosts and guests, thereby promoting social interaction and culture (Kuhzady et al., 2022). One of the most significant consequences of the sharing economy in accommodation is the reduction of prices. Sharing economy platforms provide a more affordable alternative to traditional hotels, making travel much more affordable (Zhang et al., 2023). Overall, the sharing economy accommodation sector offers a diverse and innovative approach to accommodation that caters to the evolving preferences of modern travellers looking for unique and affordable accommodation options. More broadly, clever solutions help manage tourism sustainably, which

helps reduce the use of natural resources and address environmental problems (David & El Archi, 2024).

Recent research establishes a robust theoretical framework for comprehending the sharing economy, presenting several definitions, conceptual models, and classifications that organize the domain. These assessments frequently include interdisciplinary viewpoints and analyse the complex character of the notion across several sectors. Nonetheless, despite the expanding corpus of theoretical literature, numerous research deficiencies persist. Academicians have seen an absence of conceptual coherence, resulting in diverse interpretations of the sharing economy. Moreover, several current research studies primarily emphasize economic factors, but social, environmental, and regulatory features remain relatively underexamined. There is a necessity for increased geographical diversity in research, especially for emerging and developing economies. These deficiencies underscore the necessity for additional theoretical refinement and more extensive empirical exploration (Rathnayake et al., 2024).

The sharing economy is gaining popularity, but its research interest is still dispersed and lacks a cohesive framework that can fully explain its ramifications and mechanisms. There are several important research gaps, such as inconsistent language, a lack of comprehensive frameworks that fully encompass the variety of economic, social, and technological factors, and insufficient agreement on classification schemes. Deeper empirical involvement is also still required, particularly in underrepresented industries and geographical areas. This suggests that additional refining and contextualization are still necessary even while theoretical consolidation is under progress (Haqqani et al., 2022).

One of the few areas in which scholars concur is the difficulty of defining the sharing economy and establishing distinct conceptual and empirical boundaries. The sharing economy has evolved into a comprehensive term with robust normative foundations. From the perspectives of economic, social, and environmental responsibility, sharing has the potential to contribute to sustainable development. Sharing can be viewed as a means of assuring the sustainability of products and the development of innovation from the perspective of economic responsibility (Kumar et al., 2018). For instance, sharing contributes to the improvement of supplier-customer relationships by sharing means of transportation, such as trucks and their cargo capacity, storage space, information about deliveries and orders, business contacts and references, or data about consumer opinions or cooperative advertising. This has a positive social multiplier effect (Acquier et al., 2017). It also enhances consumer relationships by sharing expertise. For instance, in the realm of social responsibility, the sharing of jobs, accommodation, cars, company catering, or household care can contribute to the enhancement of social responsibility and, among other things, serve as appealing employee benefits. In this sector, charitable sharing is also a significant factor, including sharing of vehicles, machinery, equipment, and materials, or the reduction of emissions, substantially contributes to the prevention of waste and the reduction of resource consumption in the context of environmental responsibility (Geissinger et al., 2019).

2. Methodology

Determining the mindset of Slovaks regarding the sharing of goods and services is another crucial element. Therefore, it is necessary to find out whether the concept of the shared economy in accommodation services is widespread in Slovakia, and if so, to what extent people use these services. Another important factor is how people perceive the sharing economy, what is their attitude towards it, how satisfied are they with its services, and what are their preferences when choosing accommodation. Taking all of this into account, the authors set out to create a questionnaire whose primary objectives were to ascertain whether Slovaks share and what their opinions are on the system of sharing economy. The authors also focused on finding out and collecting information about respondents' preferences when choosing a place to stay. These questions helped to obtain general information about respondents' travel and accommodation preferences. There were 19 questions in

the questionnaire overall, the first of which was designed to gather respondents' demographic information. Additional inquiries were made to determine people's interest in the goods, services, loans, and sharing aspects of the sharing economy. Between January 2024 and March 2024, the survey was carried out. 385 respondents in all used a Google form to electronically complete the survey. The second part of the questionnaire was focused on traveling for the purpose of vacation, entertainment or relaxation, and on finding out preferences when choosing accommodation. The last part focuses specifically on the accommodation sector within the sharing economy, where we investigated people's interest in these services and their satisfaction.

It is important to conduct a statistical verification of the qualitative results obtained from the questionnaire survey to ascertain the interdependence of the investigation's essential factors. In order to confirm any relationship between the variables, the Pearson's χ^2 square test was chosen. The authors consequently concentrated on the verification of these study hypotheses:

H1: There is a statistically significant relationship between the respondents' monthly income and frequency of travelling for entertainment, vacation, or relaxation.

H2: There is a statistically significant relationship between the age category of the respondents and whether they used accommodation through a sharing economy platform in the past.

H3: There is a statistically significant relationship between the respondents' monthly income and reasons for using accommodation platforms within the sharing economy.

The authors also employ the test of agreement of the mean value μ with the known constant μ_0 , on the basis of which other hypotheses are established.

H4: $\mu = 0.80$ (assuming that 80 % of respondents are satisfied with sharing economy services)

H0: $\mu_0 > 0.80$ (assuming more than 80 % of respondents are satisfied with sharing economy services)

$$\text{Test criterion } Z = \frac{p - \mu_0}{\sqrt{\frac{\mu_0(1 - \mu_0)}{n}}} \quad (1)$$

where sample proportion represents the character p in the sample, total size of the statistical file n , known constant μ_0 .

The obtained results must be compared in the following way:

$$\text{Critical domain in the form of the inequality: } Z > z_{2\alpha} \quad (2)$$

where Z represents test criterion, and $z_{2\alpha}$ represents the critical value of the normalized normal distribution $N(0,1)$.

The established hypotheses serve to provide a deeper understanding and verification of consumer preferences in the area of shared accommodation. The established hypotheses are chosen mainly to find out which specific factors depend on the use of the sharing economy, but also on overall travel habits and preferences. Moreover, such verification also has an added value, namely that it can provide traditional providers (hotels, motels, and guesthouses) with feedback on what factors are important to consumers and to what extent shared accommodation can be considered as competition for conventional accommodation services.

Consumer behavior under the framework of the sharing economy was investigated using a quantitative research design grounded on a structured questionnaire. This approach lets one methodically gather consistent data from a bigger sample and lets one statistically assess preferences and patterns of decision-making. The strategy is in line with other studies in the domains of digital platform use (Gössling et al., 2020; Zhang et al., 2023). Selected socio-demographic traits and consumer behavior were investigated for relationships using Pearson's χ^2 square test. In consumer and marketing research, this non-parametric test is often used to identify statistically significant connections between categorical variables (Codagnone et al., 2016). Furthermore, a test for

proportions was used to confirm the relevance of prominent answer categories, including important criteria for decision-making including price, location, internet reviews and other important criteria.

3. Research results

Accommodation has long been considered one of the largest and most widespread sectors within the tourism economy. Accommodation expenses represent the main part of total tourist expenses. According to Eurostat (2020) accommodation accounted for 35% of Europeans' travel spending, making it a significant part of total travel spending. At the end of 2019, the COVID-19 pandemic broke out, affecting people's lives and disrupting economies of many countries. COVID-19 and the various restrictions caused by it, quarantines, or people's fear of infection have also significantly affected the sectors of the shared economy and its platforms. One of the key factors that has affected sharing economy sectors and platforms during the pandemic is the level of physical interaction. The COVID-19 pandemic has caused Airbnb's gross nights, experience, and bookings to fall by more than 70 % in all countries where Airbnb operates overall (Nuttah et al., 2023). Despite the seriousness of the situation, the company found ways to help it overcome this period. Customers avoided making new bookings due to the pandemic and travel restrictions. Therefore, Airbnb decided to implement a new refund policy that allowed cancellation of the reservation in cases of urgent need and a full refund. This means that customers could cancel their booking completely risk-free in case of illness or other reason. In this way, it was possible to allay the fears of customers and convince those who were hesitant to proceed with their bookings. (Airbnb, 2023). After the pandemic, Airbnb is achieving the rapid growth it had outlined in the last few years before the pandemic. In 2022, after the easing of measures, Airbnb surpassed its record for booked nights and experience. In 2023, the growth continued, and the value of booked nights and experience climbed to a record 448.2 million bookings. Airbnb, but also the entire accommodation sector of the sharing economy, tends to continue to grow as the demand for accommodation continues to rise and more and more people become aware of the exceptionality of not only Airbnb but also other platforms (Figure 1).

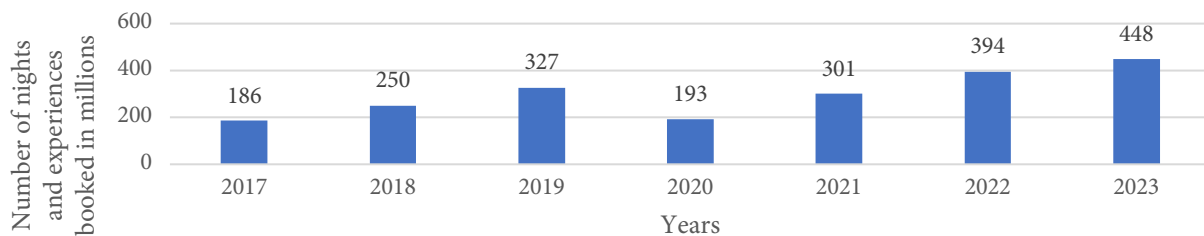


Figure 1. Number of nights and experience booked in Airbnb through time period.

Source: own processing according to the Statista portal (2024).

This research from secondary data is supplemented by data collection through a questionnaire. Based on the collected data, the authors decided to create a table (Table 1) for a better orientation and display of the gender and the age of the respondents.

Table 1. Gender and age groups of respondents.

Gender	Percentage expression (%)	Age group	Percentage expression (%)
Male	42.3	18-25 years	36.1
Female	57.7	26-40 years	19.0
-	-	41-55 years	27.2
-	-	51 and more years	17.7

Source: own calculations.

The authors supplemented the basic demographic data about the respondents with other demographic data (Table 2), which aimed to find out other data about the respondents, which could then be used in the verification of statistical hypotheses.

Table 2. Other demographic data about the respondents.

Status	Percentage expression (%)	Monthly income	Percentage expression (%)
Student	31.3	To 500 €	21.3
Employed	53.8	500 to 800 €	13.8
Unemployed	2.6	800 to 1,500 €	34.1
Pensioner	9.5	1,500 € and more	20.5
Parent on maternity/parental leave	2.8	without income	10.3
Education	Percentage expression (%)	Residence	Percentage expression (%)
Elementary	2.3	City	62.8
Secondary	40.0	Countryside	37.2
University degree	57.7	-	-

Source: own calculations.

In addition to the fundamental demographic characteristics (as indicated in Table 1), the authors' primary focus on the questionnaire survey data was on the utilization of the sharing economy system in the marketplace and specifically in travel, accommodation and shared accommodation. The majority of respondents travel at least once every six months (35.4%), and many respondents in the questionnaire marked the option of traveling at least once a year (32.4%). 20.2% of respondents travel several times a year for recreation. The smallest share (2.8%) of respondents do not travel for vacation, entertainment, or relaxation at all. The results of this question indicated the diversity of travel habits among the respondents.

41.5% of respondents prefer short trips that last less than 6 hours. 28.7% said that their trips last more than 6 hours and at the same time, less than 2 days. However, a significant part of the sample spends more time on the road. 29.8% of respondents declare that their trips last more than 2 days. The questionnaire survey shows that the respondents mostly prefer shorter journey times to the destination. The authors considered it important to examine the factors based on which the respondents would decide or decide when choosing accommodation. They decided to summarize the degree of importance into four categories: most important, important, less important, and not important. The monitored factors when choosing accommodation and their importance, as well as the number of respondents' answers, are shown in the figure below (Figure 2). The price of accommodation can be considered the most important factor among others, as its importance is emphasized by the most respondents. On average, the location of the accommodation and reviews were also very important for the respondents. Photos are important to many respondents, but from the survey, many respondents also assigned less importance to this factor. Recommendations, equipment, and dining options were given similar importance by the respondents, where the most respondents chose the option "important".

It is important to examine the respondents' experience with accommodation through the sharing economy platform. 23.6% of respondents said that they had no problem and had a very positive experience with shared accommodation. Up to 60.1% of respondents have positive experience. Another 14.3% respondents expressed themselves neutrally, which indicates that they did not have significantly positive or negative experience, or on the contrary, they had both positive and negative experience. Negative evaluations make up only a minimal part. Only 1% of respondents reported negative experience, while another 1% rated their experience as very negative.

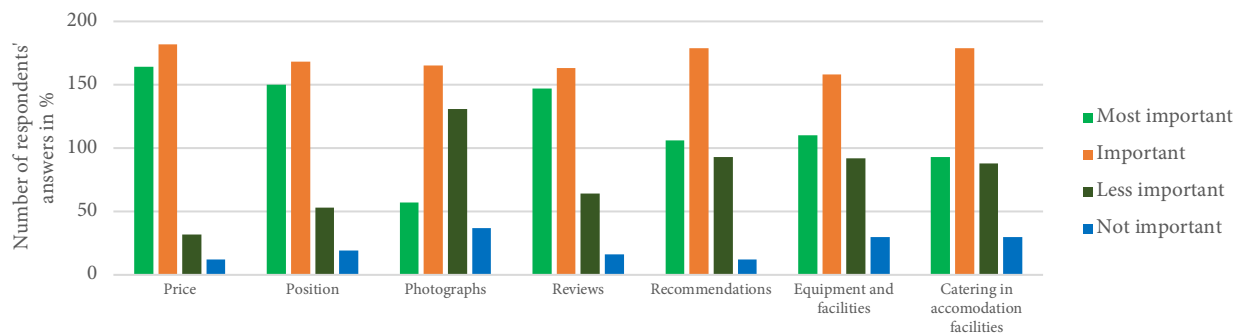


Figure 2. Factors influencing the choice of accommodation.

Source: own processing.

The respondents also answered the question, which of the stated reasons would most convince them to use sharing economy accommodation platforms if they were interested. A large part of respondents (38.9%) indicated that they would be motivated by lower costs associated with accommodation compared to traditional accommodation facilities. Ease and speed of booking would convince 25% of respondents. Sharing economy platforms offer many accommodation facilities from which interested parties can choose. 20.9% of respondents stated that the factor of a wide selection of accommodation facilities would motivate them the most when choosing accommodation. For 6.8% of respondents, it is crucial not only to find accommodation according to their preferences, but also to experience authentic local culture and interact with residents or other hosts. For these respondents, accommodation is more than just a place to sleep, it can be an opportunity to enter the world of locals and experience everyday life in a given place. For 6.4% of respondents, it is important to support the local economy and sustainability. The sharing economy is known for saving the environment by sharing surplus resources or resources that the owner does not use. Environmental protection would convince only 2% of respondents to use sharing economy accommodation platforms.

These results should also be verified statistically. Among the selected qualitative factors obtained from the questionnaire survey, it is determined whether they have a certain relationship or dependence between them. To verify the connection between the monitored variables, the authors used Pearson's χ^2 square test. To begin with, the authors decided to examine the relationship between the respondents' monthly income and how often respondents travel for entertainment, vacation or relaxation. By filtering the data based on the contingency table, authors found up to 390 answers that the respondents chose. The significance level for accepting/rejecting the hypothesis was set at 0.05. The results of the test indicate that there is no statistically significant dependence between the monitored variables and thus there is no statistically significant dependence between the respondents' monthly income and how often they travel for entertainment, vacation or relaxation (Table 3).

Table 3. Investigating the (in)dependence of various factors influencing the use of the accommodation sector of the shared economy.

	Significance level	p-value χ^2 test	Hypothesis	Cramer's p-value	Cramer's V coefficient
Monthly income and travelling for vacation or relaxation	0.05	0.134	H1 rejected	-	-
Age and use of shared accommodation	0.05	< 0.05	H2 accepted	< 0.05	0.375
Monthly income and reasons for using accommodation platforms	0.05	0.0156	H3 accepted	0.0156	0.167

Source: own calculations.

The authors also continued by statistically verifying the dependence between the age of the respondents and whether they had used accommodation through the sharing economy platform in the past. The calculated p-value is less than the set significance level of 0.05, and it can therefore be concluded that there is a statistically significant relationship between the age of the respondents and

whether they have used accommodation through the sharing economy platform in the past. Furthermore, attention was also focused based on this established dependence, the authors determined the strength of this statistical dependence. Based on Cramer's coefficient V, it can be declared that the dependence between the age of the respondents and the use of accommodation through the sharing economy platform is moderately strong. This dependence may be because younger people are often more technologically savvy and ready to accept new accommodation options. Younger people are more inclined towards sharing economic trends, while older generations rely more on traditional accommodation options (Table 3).

Finally, the authors decided to verify the dependence between the respondents' monthly income and the reasons for using accommodation platforms within the sharing economy. When examining the relationship between these variables, it is crucial to note that only those who indicated "yes" when asked if they had previously used accommodation within the sharing economy provided an explanation for their use of these platforms. The calculated p-value is less than the set significance level of 0.05, and it can therefore be concluded that there is a statistically significant relationship between the respondents' monthly income and reasons for using accommodation platforms within the sharing economy system. Furthermore, attention was also focused based on this established dependence, the authors also determined the strength of this statistical dependence. Based on Cramer's coefficient V, it can be declared that the dependence between the respondents' monthly income and reasons for using accommodation platforms within the sharing economy system is weak. People of different income levels have different preferences and lifestyles, which affects their reasons for using sharing economy accommodation platforms. For example, respondents with a higher monthly income can afford to use sharing economy services more often or prefer higher comfort and convenience than respondents with a lower income (Table 3).

From the perspective of the results, it is imperative to state that the authors were able to ascertain the significance of each individual factor when selecting a accommodation and the price, location, and reviews of the lodging establishments are the most crucial factors. It is possible to evaluate, on the basis of this testing, the statistical dependence between the significant relationship between the age category of the respondents and whether they used accommodation through a sharing economy platform in the past. It was also possible to verify the statistical dependence between the respondents' monthly income and reasons for using accommodation platforms within the sharing economy. In both cases, according to Cramer's coefficient, a weak degree of dependence between the studied variables is demonstrated. From the point of view of the economic environment of the Slovak Republic, the facts found may indicate that younger individuals are frequently more accepting of new housing options and more tech adept. While older generations rely more on conventional lodging options, younger people are more likely to share economic trends. People with varying income levels use sharing economy accommodation platforms for different reasons since they have varied lives and preferences. For instance, compared to respondents with lower incomes, those with higher monthly incomes can afford to use sharing economy services more frequently or prefer greater comfort and convenience.

Almost 300 respondents responded to the questionnaire by indicating that they had previously encountered the sharing economy and had positive experiences with it. This finding should be statistically verified by the test of agreement of the mean value μ with the known constant μ_0 . The authors chose the following hypotheses to verify the fact that more than 80 % of respondents are satisfied with sharing economy services (Table 4).

Table 4. Criterion verification.

Significance level	Test criterion	Critical domain on the form of inequality	Hypothesis
0.05	-1.7205	1.6449	H4 accepted

Source: own calculations.

The failure of the inequality indicates insufficient information to substantiate the alternative hypothesis, thus precluding the assertion that over 80 % of individuals have utilized sharing economy services in any capacity (Table 4).

4. Discussion

The utilization of the market is enhanced through the sharing of resources among the numerous participants, thereby expanding the potential of free markets. The only way for there to be a link between customers and suppliers that is both effective and efficient is for there to be enormous development made in digital networks while the social trust climate is generally favourable. People's perspectives on ownership are shifting as a result of the sharing business model. It highlights the fact that the sharing economy can be tied to liberalization and adjustment of restrictions, emphasising that using rather than simply owning is the focus.

The sharing economy has changed, embracing digital revolution and responding to issues such as the COVID-19 epidemic, moving away from a narrow concentration on collaborative consumption and toward a more diverse strategy. Trust, technology, and sustainability have always been important factors. Modern digital technologies have an internal and external impact on the organization, enabling the development of new business models and revolutionizing the clientele's experience. The incumbents are aware of the necessity of strategically changing in order to create new value chains and networks (Novackova & Wefersova, 2021). Accommodations can offer distinctive experience at much reduced prices. However, private rules do not compel adherence to state laws, which may result in the host failing to fulfil their tax obligations. The mismatch between governmental and private legislation regarding the sharing economy is the reason for the significant variations in practices observed in the Slovak Republic. State laws control the leasing of private accommodations. These laws impact the facilities of the lodging facility and demand exorbitant fees and drawn-out procedures even prior to the commencement of the rental. However, renting through Airbnb is more cost-effective and time-efficient because it requires no registration fees. Prices for lodging are far lower and can offer distinctive experience. Private regulations, on the other hand, do not compel adherence to state laws, which may result in situations like tax evasion. It is appropriate to categorize the sharing economy as a legitimate economic sector (Gogolova et al., 2022; Liang et al., 2018). The situation in sharing economy in Slovakia seems to be different from that of the Western European countries. In terms of sharing economy usage, Slovakia is not a leader (Gubalova et al., 2021). Though it is a small nation, the Slovak Republic has the ability to advance the sharing economy and benefit people in the process. This phenomenon is only at the beginning in Slovakia (Garbarova & Holla Bachanova, 2018). The largest platform that allows consumers to book private accommodations is Airbnb. The Airbnb platform offers accommodation services primarily in four types of locations in Slovakia. There are large cities like Bratislava and Košice (Gregorova, 2020).

Because externalities and exogenous effects might change at any time, it is challenging to forecast the trend toward sharing. Even in the sharing domain, one can only anticipate due to factors like global conflicts, political pressures, the state of economies in many nations, and the uncontrollably spreading viruses and diseases. The contrasts between enterprises that had the capital to handle this circumstance, bridge the unfavourable situation, or adapt were further highlighted and intensified by the COVID-19 pandemic. These distinctions pertained to advancement and the utilization of existing goods, products, and services. One of the main reasons cited by clients for using sharing economy platforms is sustainability, in addition to financial benefits, social experience or life quality. More studies are required on this subject because the sharing economy promotes sustainable growth with few drawbacks (Curtis & Mont, 2020). As it has received the least attention, research needs to concentrate on the environmental aspect of sustainability. Renting accommodation through the Airbnb platform has enormous potential to meet the needs of tourists. The sharing economy concept is very much in line with the circular economy, which utilizes unused houses rented out in entirety or partially (Musthofa & Rijanta, 2023). In addition to providing financial advantages to its members,

the sharing economy fosters entrepreneurship, innovation, sustainability, and cheaper costs by fostering competition. One significant factor driving hotel demand in the lodging sector may be the sharing economy. Classic hotels are facing competition from the sharing economy. Expected effects include a decline in hotel revenue and a shift in customs and visitor behaviour (Srovnalíková et al., 2020)

The second way identified advancements that followed these rules or nations that viewed this system as a substitute for the linear economic environment that is now understood. Technological maturity and the inherent evolution of society demonstrate that economic sector stagnation is an extremely undesirable phenomenon. It is important to remember that all nations need rules, regulations, the legal system, and law enforcement since it is unrealistic to expect everyone to behave in an honourable and moral manner. But technological advancements demonstrate that they can support people in a variety of ways. Regardless of the nation they are in, smart applications, computers, laptops, tablets, and smartphones have initiated a common system. The theoretical difficulties are the main emphasis of the current work. Maintaining its commitment to sustainable methods and the creation of novel business models, the industry has branched out into different forms of consumption, such as ride-sharing and lodging. In a constantly changing and technologically advanced environment, this evolution highlights the industry's adaptability, resilience, and unwavering pursuit of responsible and effective resource utilization (Faraji et al., 2023; Juracka et al., 2023) It is important to note that the sharing economy is a paradigm shift in favour of greener practices because it is influencing consumer behaviour. People are choosing temporary access over ownership in this new trend, which is definitely good for the sustainability of the environment (Soltysova & Modrak, 2020).

The European Commission recognizes the advantages of the sharing economy and puts a focus on the fact that European nations ought to be receptive to the new opportunities that the sharing economy delivers. Within the European Union, the sharing economy is a significant contributor to the creation of new jobs and the expansion of the economy (Gössling et al., 2020). With regard to the European consumer market, it has been discovered that the number of individuals who make use of online collaborative economy platforms varies from nation to country. Due to the presence of numerous small actors and online platforms that serve the collaborative economy within the legal framework that governs services in the Single Market and ecosystems, this indicates that the collaborative consumption economy is gradually altering social and societal relations. This is evidenced by the fact that more and more small actors and platforms are serving the collaborative economy. Physical commodities, transportation services, peer-to-peer accommodation, and on-demand household services are the four key areas of the collaborative economy, and there is a correlation between the revenues of European service providers and these four sectors (Gerlich, 2023).

The research by Jelinkova et al. (2021) also demonstrates that the younger and older generations viewed the advantages of sharing in terms of economic, social, and environmental responsibility to be equivalent in the majority of cases in the neighbouring country of Slovakia - the Czech Republic. The study by Panniello et al. (2022) found, that larger use of food-related services and a larger offer in the accommodation and household services are common practices in countries that are characterized by a high level of both demand and supply of, such as Spain, France, or the Netherlands, where labour and touristic dynamics may contribute to sustain the development of these services. In particular, these practices are common in countries where there is an elevated level of both demand and supply of sharing economy. On the other hand, large-scale utilization of collaborative services that are functioning in less popular areas (the collaborative banking sector) does not have the same favourable influence on the formation and growth of both the demand and supply sides of sharing economy. One more intriguing discovery is that the growth of the supply and demand sides of the sharing economy phenomena is contingent upon the fact that the major value offer of the sharing economy phenomenon, which is the acquisition of services at a reduced cost or for free, is in

accordance with the primary market need. Having flexible working hours, for example, is an example of a secondary value proposition that is viewed as relevant by the market. On the other hand, the expansion of sharing economy platforms is less noticeable when only secondary value propositions are considered relevant. In other words, the surge in the number of search engine optimization platforms is consistent in situations when cost-cutting incentives are particularly seen as being relevant. It appears that this is a characteristic that is shared by both industrialized countries and emerging countries.

According to the study by Grybaitė et al. (2022), the initial observation of each region, it is evident that Western Europe is the dominant region.

While this study sheds light on consumer satisfaction with Slovak sharing economy platforms, regulation remains a significant issue, its growth and sustainability are heavily influenced by institutional frameworks, legal clarity, and governmental attitudes (Gössling et al., 2020). The European Commission (2016) recognizes the sharing economy's potential to generate growth and employment, but highlights the need for balanced regulation to address issues such as consumer protection, fair competition, and labor standards. However, Slovakia, like many other EU nations, lacks a comprehensive and well-defined policy for regulating the sharing economy. According to research, policy fragmentation and a lack of targeted national regulation may limit the sector's potential (Codagnone et al., 2016). Furthermore, there has been little research into how Slovak regulatory authorities address platforms like as Airbnb, Uber, and Bolt compared to countries like France and Germany, where particular legislative frameworks have been formed. Future study should not just analyse user satisfaction or economic impact but also offer personalized policy actions that consider the local economic, legal, and social contexts. This will ensure that the sharing economy promotes long-term development while reducing dangers associated with informality, taxation, and social inequality.

Conclusions

Various internet articles, newspaper articles or media can help the growth of the sharing economy. But still, many people have never used this alternative type of accommodation before, they don't even know it. However, it is necessary that the government also supports this economic model and presents it to the public as an alternative accommodation option. In this way, people will gain a better overview of the possibilities of the shared economy and the demand for these services will also increase. On the other hand, the supply will also increase. This means not only more offered services, but also their better availability and quality. Government support can also lead to greater consumer confidence in sharing economy platforms and their providers. The lower price compared to traditional accommodation received the largest representation. For many people, price is an important factor when choosing accommodation. Hosts on platforms provide their accommodation cheaper than traditional hotels or guesthouses. Therefore, sharing economy platforms are an alternative when choosing accommodation when traveling. Another important factor is the ease and speed of booking accommodation, or a wide selection of accommodation facilities. With the help of a few clicks, a potential guest can book accommodation from a wide range of accommodation facilities thanks to clear websites and mobile applications.

However, there are also barriers due to which many people avoid using accommodation services in the sharing economy. Our questionnaire survey shows that the respondents are most concerned that the description or photos of the accommodation will not match reality. This aspect creates considerable uncertainty and risk for many potential guests. Therefore, accommodation providers who provide little or unreliable information can lose potential guests and considerable income. This phenomenon will also affect the reputation and income of the platforms. Therefore, we suggest that the platforms indicate trusted hosts that can be relied upon and provide trustworthy information. These designations may be provided based on good reviews and ratings. This initiative would give hosts the opportunity to build a good reputation among potential guests, increasing confidence in

their offering and the platform. An important problem of the shared economy in the area of accommodation is for the respondents insufficient hygiene, dirty accommodation and concern about the quality and comfort of accommodation. One of the important factor's respondents declare sharing economy accommodation providers could improve is providing more flexibility in cancelling bookings. This aspect is important for guests who may encounter unexpected events or changes in plans due to which they must cancel or postpone their reservations. A lack of flexibility in cancelling a reservation can cause unnecessary inconvenience and financial loss for guests, negatively impacting their experience of staying in the sharing economy.

While economic concerns continue to influence consumer decisions, environmental and social motivations remain secondary. This challenges certain overarching assumptions in sharing economy literature that strongly associate involvement with environmental considerations. Instead, it appears that Slovak consumers value price and convenience over ethical or environmental concerns.

In the established hypotheses statistical significance was not confirmed in only one case and thus it can be declared that between the age of the respondents and whether they have used accommodation through the sharing economy platform in the past, and between the respondents' monthly income and reasons for using accommodation platforms within the sharing economy system. The article's objective can be deemed accomplished from this perspective.

The research contributes to the expansion of existing models from a theoretical perspective by incorporating contextual factors such as trust in online reviews, understanding the sharing economy, and the influence of local legislation. In a practical sense, the findings indicate that platform providers should raise their level of transparency, strengthen their review mechanisms, and customize their message to the specific needs of Slovak consumers. In conclusion, this study emphasizes the significance of increasing knowledge through the media and public involvement, and it promotes additional research on the regulatory environment and comparisons between different countries. These insights are particularly pertinent in light of the fact that digital platforms are continuing to transform tourism and accommodation in the post-pandemic period, particularly in developing economies such as Slovakia.

The main limitation of this study is the analysis of the sharing economy in only one country (Slovakia) and the focus mainly on the accommodation sector. To determine the implications of the sharing economy, future study should quantify the effects of this phenomenon on the gross domestic products of the respective national economies. Additionally, focusing on the legal modifications, platform risk, and uncertainty related to the external effects of globalization would be advantageous.

Author Contributions: Conceptualization, D.J., and M.N.; methodology, K.V., and D.J.; software, M.N., and K.V.; validation, D.J., M.N. and K.V.; formal analysis, K.V.; investigation, D.J.; resources, D.J., and K.V.; data curation, D.J. and M.N.; writing-original draft preparation, D.J., and K.V.; writing-review and editing, M.N.; visualization, D.J.; supervision, M.N.; project administration, K.V.; funding acquisition, K.V. All authors have read and agreed to the published version of the manuscript.

Funding: This research was financially supported by the Slovak Research and Development Agency Grant VEGA 1/0494/24: Metamorphoses and causalities of indebtedness, liquidity and solvency of companies in the context of the global environment and Institutional Grand of the University of Zilina 4/FPEDAS/2024 Analysis of the financial performance of European companies in the context of smart industry and innovation support.

Data Availability Statement: The data supporting the findings of this study are available on request from the corresponding author.

Conflicts of Interest: The authors affirm no conflict of interest.

Reference

1. Acquier, A., Daudigeos, T., & Pinkse, J. (2017). Promises and paradoxes of the sharing economy: An organizing framework. *Technological Forecasting and Social Change*, 125, 1–10. <https://doi.org/10.1016/j.techfore.2017.07.006>.
2. Airbnb. (2023). About us. <https://news.airbnb.com/about-us/>.
3. Belas, J. (2023). Are there differences in the approach to CSR according to the most important business sectors in the SME segment? Empirical research in the V4 countries, *Ekonomicko-manazerske spektrum*, 17(2), 86–95. <https://doi.org/10.26552/ems.2023.2.86-95>.
4. Botsman, R., & Rogers, R. (2010). *What's Mine Is Yours: The Rise of Collaborative Consumption*. Harper Business.
5. Codagnone, C., Abadie, F., & Biagi, F. (2016). The Passions and the Interests: Unpacking the 'Sharing Economy'. *JRC Science for Policy Report*. European Commission. <https://dx.doi.org/10.2791/474555>
6. Curtis, S. K., & Mont, O. (2020). Sharing economy business models for sustainability. *Journal of Cleaner Production*, 266, Article 121519. <https://doi.org/10.1016/j.jclepro.2020.121519>.
7. David, L. D., & El Archi, Y. (2024). Beyond boundaries: Navigating smart economy through the lens of tourism. *Oeconomia Copernicana*, 15(1), 15–25. <https://doi.org/10.24136/oc.2978>.
8. European Commission. (2016). A European agenda for the collaborative economy. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52016DC0356>.
9. Eurostat. (2020). Are you part of the collaborative economy? <https://ec.europa.eu/eurostat/en/web/products-eurostat-news/-/ddn-20200205-1>.
10. Faraji, M., Seifdar, M. H., & Amiri, B. (2023). Sharing economy for sustainability: A review. *Journal of Cleaner Production*, Article 140065. <https://doi.org/10.1016/j.jclepro.2023.140065>.
11. Felson, M., & Spaeth, J. L. (1978). Community Structure and Collaborative Consumption: A Routine Activity Approach. *American Behavioral Scientist*, 21(4), 614–624. <https://doi.org/10.1177/000276427802100411>.
12. Gajdosikova, D., Valaskova, K., & Lazaroïu, G. (2024a). The relevance of sectoral clustering in corporate debt policy: the case study of Slovak enterprises. *Administrative Sciences*, 14(2), Article 26. <https://doi.org/10.3390/admsci14020026>.
13. Gajdosikova, D., Valaskova, K., Lopatka, A., & Lazaroïu, G. (2024b). Corporate Debt Dynamics: Sectoral Clustering Analysis Using NACE Classification in Slovakia. *Journal of Business Sectors*, 2(1), 32–46. <https://doi.org/10.62222/FYUX6733>.
14. Garbarova, M., & Holla Bachanova, P. (2018). Sharing economy as a new form of business in global environment. In 18th International Scientific Conference *Globalization and its Socio-Economic Consequences: proceedings*.
15. Geissinger, A., Laurell, C., Öberg, C., & Sandström, C. (2019). How sustainable is the sharing economy? On the sustainability connotations of sharing economy platforms. *Journal of Cleaner Production*, 206, 419–429. <https://doi.org/10.1016/j.jclepro.2018.09.196>.
16. Gerlich, M. (2023). The Rise of Collaborative Consumption in EU Member States: Exploring the Impact of Collaborative Economy Platforms on Consumer Behavior and Sustainable Consumption. *Sustainability*, 15(21), Article 15491. <https://doi.org/10.3390/su152115491>.
17. Gogolova, M., Kovalova, E., & Lizbetinova, L. (2022). The sharing economy and the use of the Airbnb platform in Slovakia. *Ekonomicko-manazerske spektrum*, 16(2), 91–101. <https://doi.org/10.26552/ems.2022.2.91-101>.
18. Gössling, S., Hall, C. M., & Ehnis, D. (2020). European perspectives on participation in the sharing economy. *Sustainability Science*, 15(6), 1439–1451. <https://doi.org/10.1007/s11625-020-00842-6>.
19. Gregorova, B. (2020). Spatial analysis of airbnb supply in Slovakia. *Acta Geographica Universitatis Comenianae*, 64(1), 73–89.

20. Grybaitė, V., Stankevičienė, J., Lapinskienė, G., & Podvezko, A. (2022). Comparison of the environment of EU countries for sharing economy state by modern multiple criteria methods. *Amfiteatru Economic*, 24(59), 194–213. <https://doi.org/10.24818/EA/2022/59/194>.
21. Gubalova, J., Capkova, S., & Kokavcova, D. (2021). Socio-Economical Aspects of the Collaborative Economy in Slovakia. In *The Collaborative Economy in Action: European Perspectives* (pp. 285-298).
22. Haqqani, A. A. H., Elomri, A., & Kerbach, L. (2022). Sharing economy: A systematic review of definitions, drivers, applications, industry status and business models. *IFAC-PapersOnLine*, 55(10), 490–495. <https://doi.org/10.1016/j.ifacol.2022.09.441>.
23. Jelinkova, M., Tetrevova, L., Vavra, J., & Munzarova, S. (2021). The sharing economy in the context of sustainable development and social responsibility: The example of the Czech Republic. *Sustainability*, 13(17), Article 9886. <https://doi.org/10.3390/su13179886>.
24. Juracka, D., Valaskova, K., & Janoskova, K. (2023). Sharing Economy as Unconventional Alternative to Traditional Transport Services. *Management Dynamics in the Knowledge Economy*, 11(4), 338–351. <https://doi.org/10.2478/mdke-2023-0021>.
25. Klietnik, T., Kral, P., Bugaj, M., & Durana, P. (2024). Generative artificial intelligence of things systems, multisensory immersive extended reality technologies, and algorithmic big data simulation and modelling tools in digital twin industrial metaverse. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 19(2), 429–461. <https://doi.org/10.24136/eq.3108>.
26. Kostkova, M. (2020). Shared accommodation as a globalization trend in tourism. *SHS Web of Conferences*, 74, Article 03002. <https://doi.org/10.1051/shsconf/20207403002>.
27. Kostrzewski, M., Vojtekova, S., & Vlckova, M. (2023). Bankruptcy prediction for the manufacturing sector in V4 countries. *Ekonomicko-manazerske spektrum*, 17(2), 48–64. <https://doi.org/10.26552/ems.2023.2.48-64>.
28. Kovac, N., Žmija, K., Kumar, R. J., Kusa, R., & Duda, J. (2024). Digital divide and digitalization in Europe: A bibliometric analysis. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 19(2), 463–520. <https://doi.org/10.24136/eq.2899>.
29. Kuhzady, S., Seyfi, L., & Beal, L. (2022). Peer-to-peer (P2P) accommodation in the sharing economy: a review. *Current Issue in Tourism*, 25(19), 3115–3130. <https://doi.org/10.1080/13683500.2020.1786505>.
30. Kumar, V., Lahiri, A., & Dogan, O. B. (2018). A strategic framework for a profitable business model in the sharing economy. *Industrial Marketing Management*, 69, 147–160. <https://doi.org/10.1016/j.indmarman.2017.08.021>.
31. Liang, L. J., Choi, H. C., & Joppe, M. (2018). Understanding repurchase intention of Airbnb consumers: Perceived authenticity, electronic word-of-mouth, and price sensitivity. *Journal of Travel & Tourism Marketing*, 35(1), 73–89. <https://doi.org/10.1080/10548408.2016.1224750>.
32. Metzker, Z. (2024). Selected demographic determinants of CSR, financial & environmental management and business ethics in SMEs. *Journal of Business Sectors*, 2(1), 79-88. <https://doi.org/10.62222/FEND1256>.
33. Musthofa, A., & Rijanta, R. (2023). How Can Renting Accommodation Contribute To The Circular Economy? A Case Study of Airbnb Accommodation in Yogyakarta. *Journal of World Trade Studies*, 7(2), 14–26. <https://doi.org/10.22146/jwts.v7i2.6614>.
34. Nagy, M., Lazaroiu, G., & Valaskova, K. (2023). Machine intelligence and autonomous robotic technologies in the corporate context of SMEs: Deep learning and virtual simulation algorithms, cyber-physical production networks, and Industry 4.0-based manufacturing systems. *Applied Sciences*, 13(3), Article 1681. <https://doi.org/10.3390/app13031681>.
35. Novackova, D., & Wefersova, J. (2021). Use of digital technologies in business in Slovakia. *Developments in Information & Knowledge Management for Business Applications*, 2, 335–355. <https://doi.org/10.1007/978-3-030-76632-0>.

36. Nuttah, M. N., Roma, P., Lo Nigro, G., & Perrone, G. (2023). The Short-and Long-Term Impacts of COVID-19 Pandemic on the Sharing Economy: Distinguishing Between “Symptomatic” and “Asymptomatic” Platforms. *Journal of the Knowledge Economy*, 1–50. <https://doi.org/10.1007/s13132-023-01449-9>.
37. Panniello, U., Ardito, L., & Petruzzelli, A. M. (2022). Scoping the state of the sharing economy and its antecedents at the country level: Cross-country differences in Europe. *Geoforum*, 133, 140–152. <https://doi.org/10.1016/j.geoforum.2022.05.013>.
38. Rathnayake, I., Ochoa, J. J., Gu, N., Rameezdeen, R., Statsenko, L., & Sandhu, S. (2024). A critical review of the key aspects of sharing economy: A systematic literature review and research framework. *Journal of Cleaner Production*, 434, Article 140378. <https://doi.org/10.1016/j.jclepro.2023.140378>.
39. Soltysova, Z., & Modrak, V. (2020). Challenges of the sharing economy for SMEs: A literature review. *Sustainability*, 12(16), Article 6504. <https://doi.org/10.3390/su12166504>.
40. Srovnalíková, P., Semionovaitė, E., Baranskaitė, E., & Labanauskaitė, D. (2020). Evaluation of the impact of sharing economy on hotel business. *Journal of Tourism and Services*, 11(20), 150–169. <https://doi.org/10.29036/jots.v11i20.145>.
41. Statista. (2024). Nights and experiences booked with Airbnb from 2017 to 2023. <https://www.statista.com/statistics/1193532/airbnb-nights-experiences-booked-worldwide>.
42. Valaskova, K., Nagy, M., & Grecu, G. (2024). Digital twin simulation modeling, artificial intelligence-based Internet of Manufacturing Things systems, and virtual machine and cognitive computing algorithms in the Industry 4.0-based Slovak labor market. *Oeconomia Copernicana*, 15(1), 95–143. <https://doi.org/10.24136/oc.2814>.
43. Vatamanescu, E. M., Dabija, D. C., Gazzola, P., Cegarro-Navarro, J. G., & Buzzi, T. (2021). Before and after the outbreak of covid-19: Linking fashion companies' corporate social responsibility approach to consumers' demand for sustainable products. *Journal of Cleaner Production*, 321, Article 128945. <https://doi.org/10.1016/j.jclepro.2021.128945>.
44. Zhang, Y., Li, L., Sadiq, M., & Chien, F. S. (2023). Impact of a sharing economy on sustainable development and energy efficiency: evidence from the top ten Asian economies. *Journal of Innovation & Knowledge*, 8(1), Article 100320. <https://doi.org/10.1016/j.jik.2023.100320>.