

URBAN-RURAL DISPARITIES IN TRAVEL DURING THE COVID-19 PANDEMIC THE CASE STUDY OF SERBIA

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With 2 figures and 4 tables

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Summary: In the past two years, the spread of the COVID-19 has affected large parts of economic and social life globally, especially the tourism industry, due to the restrictions on mobility. The pandemic caused uneven regional consequences. In addition to the differences in the number of infected persons, the mortality rate, and the number of vaccinated between individual countries, disparities between rural and urban areas are particularly evident. Fundamental differences in transport infrastructure and mobility behavior between urban and rural populations suggest differences in risk perception and future travel behavior. However, urban-rural disparities in travel behavior during the COVID-19 pandemic have hardly been explored so far, and this study aims to help fill this gap. The aim of this paper is to investigate the changes and differences in travel risk perceptions and travel behavior of urban and rural residents under the influence of the pandemic. Analyses were conducted based on an online survey data collection in June 2021 among 399 urban and 260 rural residents of Serbia. The results showed differences in travel intentions, travel frequency, and destination choice between urban and rural residents, as well as a preference for domestic tourism and short-haul travel. This study can serve as a guideline for future research on the urban-rural dichotomy regarding travel during the COVID-19 pandemic and as a reference point for comparative studies on urban-rural differences and tourism in different countries and geographical regions.

Zusammenfassung: In den beiden zurückliegenden Jahren hat die Ausbreitung von COVID-19 global weite Teile des wirtschaftlichen und gesellschaftlichen Lebens betroffen. Einschränkungen der Mobilität trugen vor allem zu einer Betroffenheit der Tourismusindustrie bei. Die Auswirkungen der Pandemie sind allerdings regional sehr unterschiedlich ausgeprägt. Neben den Unterschieden hinsichtlich Zahl der Infizierten, der Sterberate und den Impffzahlen zwischen einzelnen Staaten, werden vor allem Unterschiede zwischen ruralen und urbanen Räumen deutlich. Grundsätzliche Unterschiede in der Verkehrsinfrastruktur und im Mobilitätsverhalten zwischen Stadt- und Landbevölkerung lassen vermuten, dass sich ebenfalls Unterschiede hinsichtlich Risikowahrnehmung und zukünftigem Reiseverhalten ergeben. Die Unterschiede zwischen Stadt und Land in Bezug auf das Reiseverhalten während der COVID-19-Pandemie wurden jedoch bisher kaum erforscht und die vorliegende Studie soll dazu beitragen diese Lücke zu schließen. Ziel dieser Studie ist es, die Veränderungen und Unterschiede in der Wahrnehmung von Reiserisiken und im Reiseverhalten von Stadt- und Landbewohnern unter dem Einfluss der Pandemie zu untersuchen. Die Grundlage der Analyse stellt eine Online-Befragung dar, die im Juni 2021 unter 399 städtischen und 260 ländlichen Einwohnern Serbiens durchgeführt wurde. Die Ergebnisse zeigten Unterschiede in den Reiseabsichten, der Reishäufigkeit und der Wahl des Reiseziels von Stadt- und Landbewohnern sowie eine Präferenz für Inlandstourismus und Kurzstreckenreisen. Diese Studie kann als Grundlage für künftige Forschungen zur Dichotomie von Stadt und Land in Bezug auf Reisen während der COVID-19 Pandemie und als Bezugspunkt für vergleichende Studien zu Unterschieden zwischen Stadt und Land und Tourismus in verschiedenen Ländern und geografischen Regionen dienen.

Keywords: Urban-rural differences, COVID-19, travel risk perception, travel behavior, Serbia

1 Introduction

The COVID-19 pandemic, as a global health crisis, has affected most countries in the world and left negative effects on the economy and society. The spread of the COVID-19 infection causes uneven regional consequences and affects economic sectors differently (ASCANI et al. 2020, RODRÍGUEZ-POSE & BURLINA 2021). The tourism industry experiences heavy losses due

to infectious diseases. The COVID-19 virus has influenced the perception, travel intentions, and tourists' behavior, causing global changes in tourism demand (IVANOVA et al. 2021). Also, this pandemic determined the uneven distribution of the number of infected, vaccinated, tested, and dead among the residents of urban and rural settlements (CALLAGHAN et al. 2021, MURTHY et al. 2021), conditioning differences in their future travel behavior and risk perception.



The previous literature on the urban-rural dichotomy has emphasized significant differences regarding travel habits, intentions, and behavior between urban and rural residents, even before the pandemic (PUCHER & RENNE 2005, MILLWARD & SPINNEY 2011, OMELAN et al 2016). Those differences were caused by distinctions in their socioeconomic and socio-demographic characteristics, lifestyle, consumption patterns, and cultural concepts (ZIMMER 1995, YANG & WU 2014, FAN et al. 2014). However, little research has examined the urban-rural differences regarding travel during the COVID-19 pandemic, so the author intends to complement the mentioned gap through this research. Compared to the previous literature, the main contribution of this study would be to examine the changes and differences in the travel behavior of urban and rural residents under the influence of the pandemic. The importance of this issue is in adapting the tourist offer to the different needs of urban and rural travelers to quickly and efficiently revitalize the tourism industry. From the scientific perspective, this study can serve as a reference point for future research on the uneven geography of the pandemic in other countries and comparative studies on the urban-rural dichotomy influenced by the COVID-19 crisis.

The primary goal is to investigate how the pandemic affected travel intentions, travel risk perception, and travel behavior of the urban and rural population in Serbia and whether the existing differences between them have been reduced or intensified. The goal was achieved by comparing the urban and rural residents' attitudes on the travel risk during the pandemic, travel preferences, tourist demand, compliance with preventive measures, avoidance or cancellation of travel, and vaccination, considering their socio-demographic characteristics and previous experience with the COVID-19. The instrument for achieving this goal will be an online survey distributed among urban and rural populations of Serbia. The obtained results will be analyzed according to the urban-rural travel differences determined before the pandemic to emphasize the impact of the COVID-19 virus on behavior change.

The following research objectives have been formulated:

- Determine if there are differences in travel risk perception and travel behavior during the pandemic between urban and rural residents.
- Determine if there are differences in travel intention during the pandemic between urban and rural residents.
- Assess differences in destination choice during the pandemic between urban and rural residents.
- Determine whether previous experience with the COVID-19 virus influence travel risk perception and travel behavior of urban and rural residents.
- Assess whether the differences in travel frequency of urban and rural residents affect their travel behavior and risk perception during the pandemic.

To fulfill these objectives, the article is organized as follows: the second section explains general travel disparities between urban and rural residents and the impact of the COVID-19 on travel risk perception and travel behavior. The third section presents the study area, while the fourth covers the design of the questionnaire, sample, methods, and analyses used. The fifth section covers the results obtained, while the sixth is focused on their discussion. Finally, the seventh and eighth sections summarize the conclusions and limitations of the study.

2 Literature review

The scientific community has shown interest in studying the urban-rural dichotomy in tourism (PUCHER & RENNE 2005, MILLWARD & SPINNEY 2011, OMELAN et al. 2016). It has been determined that the differences in travel risk perception and behavior among urban and rural populations are conditioned by socio-demographic disparities, different cultural concepts, and the influence of the external environment (XINXIAN et al. 2007, OMELAN et al. 2016, REICHERT et al. 2016, GROSSE et al. 2018, FAN et al. 2014). In addition, the recent outbreak of the COVID-19 virus has also left unequal effects on urban and rural populations (CHAUHAN et al. 2021, HUANG et al. 2021, MURTHY et al. 2021). Urban settlements are hotspots for rapid transmission of contagious infectious diseases because of more social contacts than in rural areas, which can cause a higher level of perceived risk among urban residents (CHAUHAN et al. 2021). On the other side, a higher percentage of the elderly population with health issues and limited access to health facilities in rural areas necessitate their greater vulnerability to infectious diseases (THOMAS et al. 2014). Urban areas have a higher total number of confirmed COVID-19 cases but a lower-case rate (HUANG et al. 2021). This is supported by the fact that rural residents are less willing to comply with the recommended preventive

measures, which increases the risk of contracting the virus and the frequency of a disease in rural regions (CALLAGHAN et al. 2021). The urban residents are more concerned about the severe consequences of the infection and traveling during the pandemic which may elicit a higher response to vaccination in urban than in rural areas (CHAUHAN et al. 2021, MURTHY et al. 2021). During the COVID-19 pandemic, mobility and travel frequency declined significantly in both urban and rural areas, while urban residents faced more strict restrictions regarding outdoor recreation and leisure activities (RICE et al. 2020). The unequal effects of the COVID-19 in urban and rural areas are recognized as particular factors which can influence disparities among urban and rural residents regarding risk perceptions and behavior in future travel.

2.1 Travel risk perception and travel behaviour under the influence of the COVID-19

The term risk perception refers to subjective beliefs and assessments that are associated with risky, uncertain situations (BAUER 1960). It is usually explained as a cognitive estimation of negative outcome severity and probability (SLOVIC 2000). Numerous studies have shown that risk perception can be affected by socio-demographic factors (age, gender, nationality), psychographic factors (personality characteristics) and external factors such as culture, society, politics, media (KASPERSON et al. 1988, REISINGER & MAVONDO 2006, KARL & SCHMUDE 2017). Risk perception determines people's attitudes and behavior and has a great impact on the decision-making process (WILLIAMS & BALAZ 2013). Risk perception in tourism emphasizes the assessment of each individual related to the dangers that may affect their travel decisions and behavior (CHEW & JAHARI 2014). Travel behavior implies two domains: habitual travel behavior manifested through daily trips for work, leisure, and shopping and tourist travel behavior (PEATTIE 2010). Some authors have researched the effects of the COVID-19 on travel intentions and behavior (SO YOUNG & PO-JU 2021, ZHAN et al. 2020). The COVID-19 virus has caused a negative correlation between travel risk perception and travel intentions. A higher level of perceived risk regarding contracting the COVID-19 virus implies a lower probability of visiting a particular destination. Since risk perception is a subjective process, traveling during the COVID-19 pandemic can be perceived based on personal experiences and the epidemiological situation in the home country of potential travelers

(JAHARI et al. 2021). The COVID-19 virus induced a change in tourist demand and behavior. Tourists became oriented towards domestic tourism, rural destinations and short-distance travel and more willing to travel on business than on leisure trips. Although a positive attitude towards travel after the pandemic is present, tourists will consider health safety when choosing a destination, avoid crowds whenever possible and take additional hygiene measures (IVANOVA et al. 2021, TEEROOVENGADUM et al. 2020). Apart from these general differences in travel intentions and preferences, the previous literature on the COVID-19 impacts revealed uneven regional consequences of the pandemic (CHAUHAN et al. 2021, HUANG et al. 2021, MURTHY et al. 2021), causing significant changes and disparities in risk perception and behavior among urban and rural societies.

2.2 Urban-rural travel disparities before the pandemic

As the effects of the COVID-19 virus differ in urban and rural areas, future perceptions and attitudes about travel between urban and rural residents may also differ. These assumptions can be related to the previous studies that found differences in travel behavior before the pandemic along the urban-rural continuum (PUCHER & RENNE 2005, MILLWARD & SPINNEY 2011, OMELAN et al. 2016). In contrast to the substantial work on disparities in urban and rural tourism development and urban and rural residents' attitudes toward tourism, relatively little was known about distinctions in travel intentions and travel behavior of these two groups. In recent years, there has been an increasing interest in the exploration of rural areas as emissive tourism markets, which led to more research focused on differences in the travel behavior of urban and rural dwellers (HOUGH et al 2008, MILLWARD & SPINNEY 2011, FAN et al. 2014). Most studies on differences in travel behavior between them are primarily focused on daily trips (STEAD & MARSHAL 2001, PUCHER & RENNE 2005, ZHAO & WAN 2021), while there has been less discussion about urban-rural dissimilarities regarding tourism trips. So, this study will not focus on the habitual travel behavior of urban and rural residents but will address the differences in their tourist travel behavior caused by the COVID-19 pandemic.

Several authors have indicated that place of residence is one of the major factors in determining leisure travel behavior (ZIMMER et al. 1995, OMELAN et al. 2016, FAN et al. 2014, GROSSE et

al. 2018). Some studies pointed out differences in the travel behavior of urban and rural residents (OMELAN et al. 2016, BARTOSIEWICZ & PIELESIAK 2019; HOUGH et al. 2008). However, most research has focused on examining the travel patterns and behaviour of the urban population (GROSSE et al. 2018, CZEPKIEWICZ et al. 2018, CZEPKIEWICZ et al. 2020). GROSSE et al. (2018) discovered that residents from urban areas in Denmark are involved in more long-distance international trips due to the urban lifestyle, higher income, better education. Moreover, frequent long-distance trips are part of the cosmopolitan lifestyle, while airport accessibility in urban areas positively affects traveling by plane for leisure purposes (BRUDERER ENZLER 2017, HOLZ-RAU et al. 2014). Numerous studies confirm that urban residents predominate in international trips and long-distance travel (STEAD & MARSHALL 2001, FRÄNDBERG & VILHELMSON 2003, HOLZ-RAU et al. 2014). HOLZ-RAU et al. (2014) noticed interesting contrast in distances traveled by urban residents in daily trips and long-distance trips. Namely, the inhabitants of large, densely populated cities travel shorter distances daily but make more and lengthier long-distance trips than residents from low-density neighborhoods. It appears that urban density can induce a greater necessity for leisure travel as a form of escapism.

Some of the reasons for disparities in travel intentions and behavior of urban and rural residents are differences in their socioeconomic, socio-demographic characteristics, and lifestyles. Higher-income, better standard of living, cosmopolitan lifestyle, and smaller household sizes among the urban population lead to their greater need for travel and the possibility of choosing distant destinations, often accessible only by plane (NÆSS 2005, REICHERT et al. 2016, GROSSE et al. 2018). On the other hand, studying rural residents' tourism in the province of Zhejiang in China, FAN et al. (2014) found that the smallest percentage of the rural population chose the plane as a mode of transport for leisure travel. In contrast to urban dwellers, income is a major factor influencing the travel behavior of rural residents (XINXIANG et al. 2007). Also, their habits and cultural concepts condition the prioritization of work over leisure activities, while the lack of information and the absence of travel agencies and services in rural areas lead to reduced travel motivation. The rural population follows the travel behavior of friends and relatives and opts for closer, more affordable destinations in the season when they are not preoccupied with farm work. Their tourist con-

sumption is focused on transport and shopping, while the least resources are allocated for entertainment, which can indicate the different tourist needs of urban and rural travelers. Furthermore, due to underdeveloped travel habits, their travel frequency is low (they usually travel once a year) (FAN et al. 2014). Differences between urban and rural residents also exist considering medical travel. CHAKRABARTI & TATAVARTHY (2019) revealed disparities in destination choice for medical trips in India, emphasizing the preference of urban dwellers for medical travel in remote districts. Studying tourist activities of senior citizens in urban and rural areas of Poland, OMELAN et al. (2016) confirmed that urban residents choose leisure activities and travel more often than their rural counterparts due to socioeconomic and lifestyle differences. Employment in agriculture, lower education, low material status, reduced access to different modes of transport and undeveloped travel initiative led to a smaller population of active tourists in rural regions. In contrast, rural residents who showed the greatest interest in travel are more similar in socioeconomic characteristics to urban ones (OMELAN et al. 2016). The aforementioned literature revealed significant differences in the travel behavior of urban and rural residents before the pandemic. Considering these findings and the unequal effects the pandemic left on urban and rural dwellers (CHAUHAN et al. 2021, HUANG et al. 2021, MURTHY et al. 2021), it is essential to identify changes in travel behavior and current similarities and disparities between these two groups under the influence of the COVID-19.

3 Study area

There are 6158 settlements on the territory of Serbia. Out of 7 million inhabitants, 60% lives in urban settlements, while 40% live in settlements categorized as "other", which are most often equated with rural settlements (GAJIĆ et al. 2021).

The first case of COVID-19 in Serbia was registered on March 6, 2020. Until July 28, 2021, the total number of tested people was 4,643,835, confirmed cases 720,975 and recorded deaths 7108. During the first phase of the COVID-19 crisis in Serbia, the most affected were large cities. At the end of July 2021, 332 cases of the COVID-19 infection and no deaths were reported. Consequently, there is a tendency to decrease disease incidence in all parts of the country (IPH-BATUT 2021). Serbia was among the first countries in Europe to launch

a vaccination campaign against the COVID-19 virus. Until the end of July 2021, about 39% of the population of Serbia has received both doses of the vaccine. The epidemic is still ongoing, but the epidemiological situation is stable (IPH-BATUT 2021).

Unfortunately, restrictions on movement and preventive measures introduced to prevent the spread of the COVID-19 virus have led to a decline in tourist traffic globally and in Serbia as well. Although the Serbian tourism industry is less developed than in the leading tourist destinations in Europe, tourism has become more important for the economy of this country in recent years and its direct contribution to the GDP of Serbia increased from 0.54% to 2.32% from 1996 to 2018 (THE WORLD BANK 2021). The number of tourist arrivals in Serbia decreased by 50.7% in 2020 compared to 2019. The most significant drop-down was observed in foreign tourist arrivals (75.9%), while domestic tourist arrivals dropped by 25.4%. Compared to 2019, in 2020 has also been a large decline in the number of overnight stays of foreign (68.5%) and domestic tourists (18.6%) (SORS 2021a).

During the pandemic in 2020, most residents of Serbia decided to avoid travel, perceiving it as very risky, while the majority of those who chose to travel went for trips within the country, making domestic tourism dominant (PERIĆ et al. 2021). On the other hand, the annulment of travel restrictions and the emergence of vaccination have caused a significant increase in tourist traffic and revenues in 2021 compared to 2020. In April 2021, Serbia registered an increase in tourist arrivals by 2078.2% compared to the same period last year, while the number of overnight stays increased by 857% (SORS 2021b). Therefore, stabilization of the epidemiological situation in Serbia and the increase in the number of vaccinated can significantly affect the travel risk perception and travel behavior of Serbia's residents in 2021.

4 Methods

This research is based on quantitative research methods. The survey instrument was an online questionnaire, conducted in June 2021. Due to the aggravating circumstances for traditional surveys caused by the COVID-19 and in order to quickly, easily and inexpensively obtain data from a large number of respondents, for the distribution of the survey the author chose Facebook groups that bring together urban or rural residents of Serbia.

The questionnaire consisted of five sections. The first section included eight statements that test travel risk perception. The second section consisted of thirteen statements regarding travel behavior during the pandemic. They were formulated according to studies by NEUBURGER & EGGER (2021) and IVANOVA et al. (2021). Certain claims have been modified to fit the pandemic phase in Serbia in which the research was conducted. The third section determined the travel intentions and destination preferences of the respondents. The fourth section indicated the vaccination of the respondents, the previous experience with the COVID-19 virus, the period when they were infected, the severity of symptoms and the frequency of travel before the pandemic. Finally, the fifth section gathered information on the socio-demographic status of the respondents. The claims related to travel risk perception and travel behavior were ranked on a five-point Likert scale (1 – strongly disagree, 2 – disagree, 3 – neither agree nor disagree, 4 – agree, 5 – strongly agree), while other sections contained multiple-choice questions.

Respondents selected their place of resident in the questionnaire. These residencies were classified by the Statistical Office of the Republic of Serbia (SORS 2011). As a result, there were 399 respondents from urban and 260 from rural settlements. To fulfill the research objectives and present differences between urban and rural residents regarding travel in the pandemic, the author used descriptive statistics, Chi-square test, t-tests and factorial ANOVA. All data were analyzed using SPSS.

5 Results

5.1 Sample analysis

The sample consists of 46.3% men and 53.7% women. The largest number of respondents are within the age range of 18-50 (62.7%). The majority of the participants completed high school (36.3%) or obtained a bachelor's degree (28.7%). In terms of total monthly income in the household, the 3 most common income ranges are 501–1000€ (35.2%), 1001–2000€ (23.5%) and 301–500€ (19.9%). Before the COVID-19 pandemic, 53.6% of respondents used to travel 1-2 times per year, 27.3% 3-5 times per year, 13.8% more than 5 times per year and 5.3% claim they did not travel (cf. Tab. 1). The urban population represents 60.5% of the sample and the rural 39.5%.

Tab. 1: Socio-demographic profile of urban and rural residents

	Urban residents		Rural residents	
	n	%	n	%
Gender (N=659)				
Male	169	42.36%	136	52.31%
Female	230	57.64%	124	47.69%
Age (N=659)				
<18	1	0.25%	2	0.77%
18-30	107	26.82%	45	17.31%
31-40	85	21.30%	51	19.62%
41-50	80	20.05%	45	17.31%
51-60	60	15.04%	50	19.23%
61-70	37	9.27%	43	16.54%
>70	29	7.27%	24	9.23%
Education (N=659)				
No school	0	0.00%	0	0.00%
Elementary school	3	0.75%	10	3.85%
High school	86	21.55%	153	58.85%
College	57	14.29%	27	10.38%
Faculty	142	35.59%	47	18.08%
Master studies	92	23.06%	20	7.69%
PhD studies	19	4.76%	3	1.15%
Profession (N=659)				
Student	30	7.52%	19	7.31%
Employed	252	63.16%	131	50.38%
Unemployed	47	11.78%	33	12.69%
Retired	70	17.54%	77	29.62%
Monthly household income (N=659)				
Up to 300€	33	8.27%	32	12.31%
301€ - 500€	54	13.53%	77	29.62%
501€ - 1000€	140	35.09%	92	35.38%
1001€ - 2000€	110	27.57%	45	17.31%
2001€ - 3000€	43	10.78%	8	3.08%
more than 3000€	19	4.77%	6	2.31%
Travel frequency (N=659)				
Did not travel	11	2.76%	24	9.23%
1-2x per year	189	47.37%	164	63.08%
2-3x per year	133	33.33%	47	18.08%
More than 5x per year	66	16.54%	25	9.62%

Source: Author's own survey data

5.2 Measures and data analysis

First, the reliability of the scales used in this study was tested (Tab. 2). AVE values met the minimum standard of 0.5 for both travel risk (0.54) and travel behavior (0.50), while CR exceeded the required value of 0.7 (HAIR et al. 2006). Cronbach's Alpha test confirmed the internal consistency of the scale by exceeding the suggested $\alpha > 0.7$ (CORTINA 1993). BOONE & BOONE (2012) suggested analyzing Likert scale data at the interval measurement scale,

which allows the use of more robust parametric tests. Furthermore, the normality testing by skewness and kurtosis measures, considering the large sample size of more than 300 respondents (KIM 2013), showed normal distribution of responses with the values within the range $[-2; +2]$, which enabled the use of the mean as an accurate estimator.

The author used a t-test to examine the urban-rural differences in travel risk perception and travel behavior during the pandemic (Tab. 2). The mean values regarding these two variables were not signifi-

Tab. 2: Travel risk perception and travel behavior of urban and rural residents (t-test)

Variable	Urban area		Rural area		t-test	
	Mean	SD	Mean	SD	t	Sig.
Travel risk perception (AVE = 0.54; CR = 0.90; α = 0.85)						
Tourism is mainly responsible for the spread of coronavirus.	1.95	1.07	2.00	1.19	0.522	0.602
Tourism is massively affected by coronavirus.	4.42	1.01	4.23	1.25	-2.058	0.040
Staying in a hotel is a risk, as there are many people who could carry the virus.	2.17	1.18	2.22	1.31	0.474	0.636
Staying in private accommodation is a risk.	1.80	1.08	1.86	1.24	0.686	0.493
I fear that the virus will be carried by tourists to my near surroundings.	1.99	1.16	1.96	1.22	-0.275	0.784
Travelling should be prohibited to avoid a wider spread of the virus	1.80	1.10	1.93	1.29	1.353	0.177
Business trips to countries with the unfavorable epidemiological situation are irresponsible.	3.06	1.47	3.26	1.54	1.694	0.091
Leisure travel to countries with the unfavorable epidemiological situation is irresponsible.	3.44	1.50	3.47	1.57	0.220	0.826
Travel risk perception sum	2.58	0.81	2.61	0.97	0.522	0.602
Travel Behavior (AVE = 0.50; CR = 0.92; α = 0.90)						
My travel behavior is likely to change due to coronavirus	3.40	1.47	3.45	1.57	0.416	0.678
If I travel to another country depends on how media is reporting about epidemiological situation in it	2.67	1.48	2.75	1.52	0.678	0.498
I would currently choose a travel destination depending on the health safety in that destination.	3.35	1.46	3.42	1.59	0.558	0.577
I would take additional hygienic precautions on future trips.	4.00	1.29	3.86	1.47	-1.250	0.212
I would avoid crowds during the trip whenever possible.	3.87	1.37	3.93	1.43	0.572	0.567
If the epidemiological situation in the destination I plan to visit worsens, I would cancel travel plans.	3.54	1.44	3.70	1.54	1.345	0.179
Currently I would avoid trips by boat.	2.50	1.48	2.6	1.55	0.800	0.424
Currently I would avoid trips by airplane.	2.07	1.32	2.38	1.5	2.755	0.006
Currently I would avoid trips by train.	2.26	1.38	2.46	1.49	1.740	0.082
Currently I would avoid trips by coach bus.	2.69	1.54	2.55	1.54	-1.146	0.252
Currently I would avoid big events.	3.16	1.48	3.13	1.61	-0.238	0.812
Currently, I would avoid visiting tourist attractions in my place of residence.	1.83	1.16	1.89	1.15	0.680	0.497
Currently, I would avoid any contact with tourists in my place of residence.	2.01	1.21	2.07	1.27	0.626	0.531
Travel behavior sum	2.87	1.04	2.94	1.14	0.745	0.457

Source: Author's own survey data; used scale: 5-point Likert scale

cantly different between urban and rural residents. They agree that the tourism industry is massively affected by the COVID-19 virus but disagree that tourism is the main cause of the spread of the virus and that travel should be prohibited. Concerning the type of travel, leisure trips in destinations with an unfavorable epidemiological situation are considered more irresponsible than business trips, which confirmed that tourists are more willing to travel for business purposes than on vacation during the pandemic (TEEROOVENGADUM et al. 2020). Both urban and rural residents perceived staying in private accommodation as less risky than staying in a hotel, which is expected, knowing that hotel areas frequently gather more people, causing easier transmission of the virus

(PARK et al. 2019). However, the t-test determined that there was not a statistically significant difference in the perceived travel risk ($t(483)=0.52$, $p=0.602$) nor travel behavior ($t(517)=0.74$, $p=0.457$) between urban and rural residents. The only statistically significant differences were found in the attitudes about the impact of the pandemic on tourism ($p=0.040$) and the avoidance of air travel during the pandemic ($p=0.006$). Although both urban and rural residents agree that tourism is massively affected by the coronavirus, it is noticeable that rural ones ($M=4.23$) feel that tourism is slightly less affected than urban ones ($M=4.42$). Also, the rural population ($M=2.38$) tends to avoid traveling by plane during the pandemic more than the urban one ($M=2.07$).

Then, a non-parametric Chi-square test of independence was used to examine whether there is a significant association between the place of residence (urban or rural settlement) and different independent variables regarding the previous experience with the COVID-19 virus, vaccination, travel intentions, and destination choice during the pandemic (Tab. 3). Most respondents in the total sample had already traveled around Serbia during the pandemic, and a smaller percentage of them traveled abroad. Among those who traveled, either in Serbia or abroad, urban residents dominate. These differ-

Tab. 3: Frequency of variables and Chi-square test

	Urban area		Rural area		Total	Chi-square
	N	%	N	%		
Have you already traveled in Serbia during Covid-19 pandemic? (N=659)						
Yes	240	60.15%	136	52.31%	376	$\chi^2 = 3.95$ (df=1, p=.047)
No	159	39.85%	124	47.69%	283	
Have you already traveled abroad during Covid-19 pandemic? (N=659)						
Yes	93	23.31%	40	15.38%	133	$\chi^2 = 6.13$ (df=1, p=.013)
No	306	76.69%	220	84.62%	526	
Travel intention during 2021. (N=659)						
Yes	331	82.96%	172	66.15%	503	$\chi^2 = 27.51$ (df=2, p=.000)
No	19	4.76%	36	13.85%	55	
I still do not know	49	12.28%	52	20.00%	101	
Preferred destination during 2021 (N=503)						
Serbia	75	22.66%	81	47.09%	156	$\chi^2 = 35.10$ (df=3, p=0.000)
Neighboring Balkan countries	101	30.51%	47	27.33%	148	
European countries	96	29.00%	27	15.70%	123	
Outside Europe	59	17.82%	17	9.88%	76	
Reasons for not travelling (N=55)						
Lack of financial resources for travel	3	15.79%	16	44.44%	19	$\chi^2 = 8.64$ (df=5, p=.124)
Fear of being infected with the Covid-19 virus	7	36.84%	11	30.56%	18	
Absence of travel company	3	15.79%	0	0.00%	3	
I do not feel healthy enough to travel	3	15.79%	3	8.33%	6	
Lack of time	0	0.00%	3	8.33%	3	
Other reasons	3	15.79%	3	8.33%	6	
Previous infection with Covid-19 virus (N=659)						
Yes	144	36.09%	83	31.92%	227	$\chi^2 = 1.21$ (df=1, p=.271)
No	255	63.91%	177	68.08%	432	
Period of previous infection with Covid-19 virus (N=227)						
First half of 2020	26	18.06%	16	19.28%	42	$\chi^2 = 3.35$ (df=2, p=.188)
Second half of 2020	76	52.78%	34	40.96%	110	
In 2021	42	29.17%	33	39.76%	75	
Symptoms (N=227)						
Without symptoms	12	8.33%	23	27.71%	35	$\chi^2 = 16.50$ (df=4, p=.002)
Similar to a mild cold	54	37.50%	29	34.94%	83	
Similar to a severe cold	55	38.19%	21	25.30%	76	
Serious deterioration of health	22	15.28%	10	12.05%	32	
Use of ventilator	1	0.69%	0	0.00%	1	
Current presence of negative effects of Covid-19 virus (N=227)						
Yes	30	20.69%	18	21.95%	48	$\chi^2 = 0.05$ (df=1, p=.823)
No	115	79.31%	64	78.05%	179	
Vaccination (N=659)						
Vaccinated	241	60.40%	72	27.69%	313	$\chi^2 = 100.55$ (df=0, p=.000)
No, but I plan to get vaccinated.	58	14.54%	21	8.08%	79	
No, I do not plan to get vaccinated.	100	25.06%	167	64.23%	267	

Source: Author's own survey data

ences were confirmed to be statistically significant ($p < 0.05$). Considering the second research objective regarding the future travel intentions of urban and rural residents, the author found out that the majority of respondents (76.3%) intend to travel during 2021 (Fig. 1). Again, the domination of the urban population ($p < 0.05$) is expected, given that their mobility is higher due to lifestyle and the need to rest in less dense and less polluted areas (CZEPKIEWICZ et al. 2018).

A significant association was also found between the place of residence and destination choice during the pandemic ($p < 0.05$). Figure 2 shows that the predominant destination choice of urban residents is neighboring Balkan countries (31%), while Serbia is prevalent (47%) among the rural ones. These results provided fulfillment of the third research objective of this study. The other two long-distance travel options (European countries outside Balkans or destinations outside Europe) were not prevalent choices, although a higher percentage of urban residents showed interest in traveling to more distant European destinations.

There is also a statistically significant difference ($p < 0.05$) in the number of vaccinated between urban and rural areas (0.05), indicating the higher vaccination coverage against the COVID-19 among urban (60%) than rural residents (28%). When it comes to the symptoms during the previous COVID-19 infection, the largest number of urban residents had symptoms similar to a severe cold (38%), while the largest number of rural ones experienced symptoms that resemble a mild cold (35%). The minority of ur-

ban respondents had no symptoms (8%), while the minority of the rural population experienced serious deterioration of health (12%). The use of ventilators is almost unreported. These differences turned out to be statistically significant ($p < 0.05$).

To test whether or not previous experiences with the COVID-19 virus had influenced urban and rural residents' travel risk perception and behavior, the author used a two-way ANOVA analysis. The interaction effect of symptoms during the previous COVID-19 infection and type of settlement on travel risk perception was found to be statistically significant ($p < 0.05$), explaining 4.1% of the variance in travel risk perception (Table 4). The main findings imply that respondents from rural regions who had faced serious deterioration of health ($M = 3.62$) were more concerned about travel risks during the pandemic than urban ones ($M = 2.70$). The interaction effect on travel behavior was not statistically significant ($p = 0.586$).

Finally, the author wanted to test if there are differences in travel frequency of urban and rural residents. Also, disparities in their risk perception and travel behavior during the pandemic were examined depending on whether they travel more or less often. The Chi-square test confirmed significant differences in travel frequency of urban and rural populations, indicating that the urban population travels more often than the rural (Tab. 3). Regarding the number of travel per year, the author did not categorize trips by type and different purposes. Trips for holidays, visiting friends and relatives, business trips are all included in the analysis.

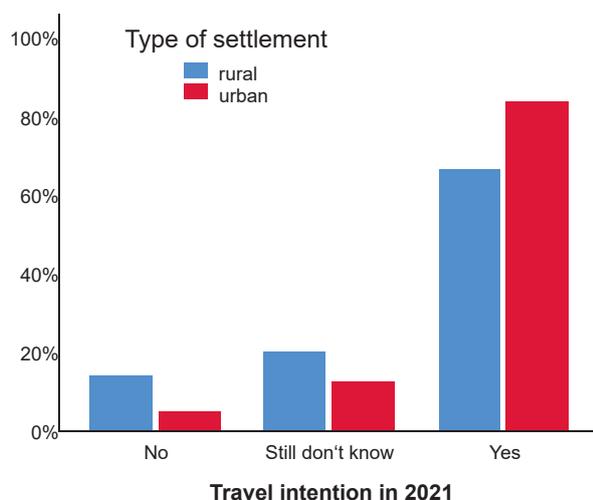


Fig. 1: Travel intentions in 2021 by type of settlement

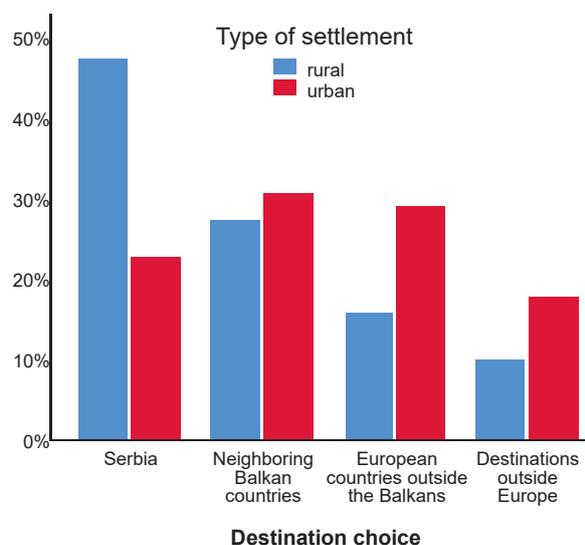


Fig. 2: Destination choice among urban and rural residents

Two-way ANOVA was used to determine the interaction effect of travel frequency and the type of settlement on travel risk perception and travel behavior. The results indicated that 1.8% of the variance in travel behavior was explained by the interaction of these two independent variables (Tab. 4).

A significant difference in travel behavior was found between urban ($M=2.66$) and rural residents ($M=1.99$) who used to travel more than five times per year before the pandemic. Among them, the urban travelers were more oriented towards responsible travel behavior and taking additional hygiene measures. The interaction effect on travel risk perception was not significant, considering $p < 0.001$ ($F(3)=2.984$, $p=0.031$).

6 Discussion

This study investigated the differences in travel risk perception, travel intentions and travel behavior of urban and rural residents in Serbia during the COVID-19 pandemic. In particular, it clarifies how the pandemic influenced urban and rural travelers

and explains disparities and similarities in their attitudes and plans for future travel in 2021. There are a couple of findings derived from this research that are important for directing and planning tourism development during and after the pandemic. First, travel risk perception and travel behavior of urban and rural residents of Serbia do not differ significantly. The differences that existed before the pandemic in the attitudes, consumers' behavior, and travel behavior of these two groups have been mitigated under the pressure of the COVID-19 virus, which has led to crucial changes in tourist demand among urban and rural populations. Also, the availability of a vaccine against infectious diseases can significantly change travel intentions and behavior (TEEROOVENGADUM et al. 2020), serving as a mediator between travel risk perception and travel participation during the pandemic. Since the research was conducted during a period of stabilization of the epidemiological situation in Serbia (IPH-BATUT 2021), easing restrictive measures and intensive vaccination promotion, it was expected that both urban and rural populations will express a lower level of concern regarding travel and higher desire to satisfy their tourist needs in 2021.

Tab. 4: Two-way ANOVA tests on travel risk perception and travel behavior

Dependent Variable: Travel risk perception				
Source	df	Mean Square	F	Sig.
Type of settlement	1	2.217	3.487	.063
Symptoms	4	3.756	5.909	.000
Type of settlement * Symptoms	3	1.968	3.096	.028
Corrected Total	226			
Dependent Variable: Travel behavior				
Source	df	Mean Square	F	Sig.
Type of settlement	1	5.929	6.083	.014
Symptoms	4	6.201	6.362	.000
Type of settlement * Symptoms	3	.631	.647	.586
Corrected Total	226			
Dependent Variable: Travel risk perception				
Source	df	Mean Square	F	Sig.
Type of settlement	1	.472	.636	.425
Travel frequency	3	6.291	8.489	.000
Type of settlement * Travel frequency	3	2.212	2.984	.031
Corrected Total	658			
Dependent Variable: Travel behavior				
Source	df	Mean Square	F	Sig.
Type of settlement	1	.002	.002	.966
Travel frequency	3	14.130	12.895	.000
Type of settlement * Travel frequency	3	4.237	3.866	.009
Corrected Total	658			

Source: Author's own survey data

Second, the study found that there was a significant difference in the attitudes of urban and rural residents regarding COVID-19 influences on the tourism industry. Rural residents, compared to urban ones, believe that tourism is slightly less affected by the pandemic. This can be related to the fact that the rural environment experienced a smaller decline in tourist traffic than urban areas during the pandemic. Also, some rural settlements have experienced an expansive tourism development, due to the tourists' reorientation to less dense, natural areas (BATRIČEVIĆ & STANKOVIĆ 2021). Another significant difference in the behavior of urban and rural residents was regarding air travel during the pandemic. The greater tendency of rural residents to avoid air travel in 2021 has to be explained in the context of the socioeconomic differences, existing between urban and rural populations. The previous literature pointed out how low income, preferences for closer destinations and less access to air transport conditions less air travel by rural than by urban residents (NÆSS 2005, FAN et al. 2014). Accordingly, it is expected that even during the pandemic, rural residents will avoid traveling by plane more than urban ones.

Third, the value system, social status and lifestyle of urban and rural communities differ. Thus, it is expected that their travel needs and intentions will be disparate. The results of this research indicate the dominance of urban residents among those who plan to travel during the pandemic and their preferences for outbound tourism, especially trips to neighboring Balkan countries. These findings are in line with the research conducted before the pandemic, which emphasized that urban residents are more likely to travel, choose distant destinations and have international travel experiences than rural ones (PUCHER & RENNE 2005, MILLWARD & SPINNEY 2011, OMELAN et al 2016, STEAD & MARSHALL 2001, FRÄNDBERG & VILHELMSON 2003, HOLZ-RAU et al. 2014). This can be explained by a higher standard of living, better education, higher income, greater access to various modes of transport and a more developed need for leisure activities among the urban population (ZIMMER 1995, YANG & WU 2014, FAN et al. 2014). The difference in income of urban and rural households in Serbia also supports these disparities (41.1% of urban households have an income higher than 1000€, while 22.7% of rural ones are in the same income range). As before the pandemic (HOUGH et al. 2008, MILLWARD & SPINNEY 2011), rural dwellers were found to choose closer destinations and to avoid travel in 2021 more often than urban ones. The orientation of the rural population towards trips

around Serbia is caused by the impact of friends and relatives on their consumer habits, their tendency towards well-known products and services, fewer resources allocated for tourism, as well as travel restrictions and health risks during the pandemic (FAN et al. 2014, OMELAN et al 2016, CHAUHAN et al. 2021).

The dominance of Serbia and neighboring Balkan countries in preferred destinations during 2021 indicates a reorientation towards domestic tourism and short-distance travel which supports findings of the previous studies (IVANOVA et al. 2021, PERIĆ et al. 2021). European countries outside the Balkans and destinations on other continents are more popular among urban than rural tourists, which can again be explained by socioeconomic differences between them, lifestyle disparities and vaccination coverage in urban and rural areas. An increase in vaccination can reduce travel risk perception, serve as a precondition for removing travel restrictions, encourage more frequent travel and orientation towards international trips. Following findings reported by MURTHY et al. (2021), the author of this paper found that a larger number of vaccinated residents are in urban areas. Easier transmission of the virus in dense settlements, a larger number of infected and greater awareness of health care among urban residents can be the reasons why 60% of them have been vaccinated while the majority of the rural population in Serbia (64%) does not plan to get the vaccine against the COVID-19 virus. Despite the impact of vaccination encouraging long-distance travel, it appears that numerous travel bans during the pandemic along with the economic crisis might affect individuals' destination choices. Consequently, long-distance travel options such as European countries outside the Balkans and destinations on other continents are generally not prevalent among the respondents.

Fourth, if we consider the previous experience with the COVID-19 virus in Serbia, a higher number of infected respondents was in urban areas due to higher urban density, greater mobility of residents and more social contacts (CHAUHAN et al. 2021). Nevertheless, the only statistically significant difference was found in the impact of symptoms during the previous COVID-19 infection on travel risk perception of urban and rural residents. It was noticed that among respondents who had faced a serious deterioration of health, rural residents perceived traveling during the pandemic as riskier than urban ones. Contrary to this, the previous studies revealed that rural residents are generally less concerned about the COVID-19 virus (CHEN & CHEN 2020, CHAUHAN

et al. 2021). However, the greater concern of rural dwellers in Serbia regarding travel during the pandemic may be related to the larger number of the elderly and lower vaccination rates in rural areas. These factors can increase the possibility of re-infection during tourism activities and negatively affect the travel risk perception of rural residents.

Finally, this study found disparities between urban and rural residents regarding travel frequency, which can also be explained by previously mentioned differences in socioeconomic status, habits and lifestyle of these two groups (OMELAN et al. 2016, FAN et al. 2014). Urban residents in Serbia travel more frequently than rural ones. Furthermore, disparities in travel behavior between urban and rural residents who travel more than five times per year confirmed the general differences in prevention behavior during the COVID-19 between these two groups (CALLAGHAN et al. 2021). Although the rural population with an interest in travel is usually similar to the urban one according to socioeconomic characteristics (OMELAN et al. 2016), their travel behavior under the influence of the pandemic still differs. The most active urban dwellers are more willing to comply with the additional hygiene measures, change their travel plans and opt for responsible travel behavior during 2021 than their rural counterparts. This is expected, given the higher level of education among urban residents and their greater awareness of health care and preventive behavior during the pandemic (CALLAGHAN et al. 2021).

7 Conclusion

This paper addressed the uneven geography of the COVID-19 pandemic through differences in travel risk perception and travel behavior among urban and rural residents in Serbia. The findings of this study contribute to the scientific literature of the uneven geography, health crisis, travel risk perception and travel behavior by highlighting the differences and similarities among urban and rural residents regarding their attitudes, travel intentions and plans during the pandemic. Furthermore, the results of this research provide several practical implications important for Serbian tourism development, but also the global tourism industry. Understanding the differences in travel risk perception and travel behavior between urban and rural residents can help government officials and tourism specialists to rebuild tourism after the pandemic. Urban and rural dwellers stand out

in the tourism market as two niches with different needs, attitudes, intentions and socioeconomic characteristics. Insights into the similarities and differences in their tourism demands and travel behavior provided in this study can serve as a starting point for creating new tourism products that will adequately meet their needs during and after the pandemic and motivate them to travel more. It would be useful to develop international cooperation in order to promote the tourism offer of the neighboring Balkan countries and create tour packages tailored to the needs of the urban population, focused on outbound tourism. On the other hand, a larger number of tourist info centers and services should be established in rural areas to encourage the rural population to travel more often. It is especially important to concentrate on domestic tourism promotion among rural residents and emphasize the importance of responsible travel behavior. The tourism industry should highlight the safety of travel services and compliance with preventive measures in marketing campaigns for both urban and rural populations. Also, given the possibility of new waves of the COVID-19 crisis, identified differences between urban and rural residents can help the tourism industry to minimize perceived risks regarding future travel, prepare a customizable offer for both markets and mitigate new, potentially negative effects of the crisis.

8 Limitations

Despite its contributions, this study has certain limitations. The domination of a younger population in the research sample (respondents from 18 to 40 years old represent 43,7%) can be a reason for data bias. The attitudes of respondents older than 60 were analyzed based on a smaller sample (20% of the total sample) due to the under-representation of the elderly on social media. Travel risk perception and behavior of residents who do not have internet access are omitted in this study. Future research should include their attitudes in the analysis and thus supplement the obtained results. Also, the main findings of this research are only applicable to the period in which the survey was conducted. Travel risk perception and travel behavior of urban and rural residents may change during and after the pandemic, especially if the vaccination rate increases. Therefore, it would be valuable to obtain supplementary data during various periods in order to investigate the issue more comprehensively.

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