

# ACCESS TO WRITTEN CULTURE AS INDICATOR OF ECONOMIC DEVELOPMENT IN THE URBAN-RURAL INTERFACE OF BUCHAREST, ROMANIA

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**Abstract:** Written culture was always considered an indicator of civilisation. The aim of this paper is to analyse the distribution of development and of accessibility to written culture in the urban-rural interface (U-RI) of Bucharest, Romania, to assess their correlation and the impact of the current pandemic crisis. Based on the population's perception regarding their accessibility to written culture through the application of over 200 questionnaires, the analysis showed that bookstores and libraries are mostly competitors. The number of readers and read books is decreasing in the U-RI due to the lack of prioritisation of these services by the local authorities, as reflected in a general decreasing trend of the number of written culture users. The consumption of literature in new formats contributes to less place-dependent cultural services, especially in the high-income areas, while the Principal Component Analysis of cultural data demonstrates a clustering of localities in the U-RI that is strongly correlated with the economic and demographic characteristics of those areas. However, despite the increased accessibility to online, non-place-dependent written culture, the numbers of books read and bought in both physical and digital format had a generally decreasing trend during the pandemic.

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## Introduction

Urban sprawl is currently changing the physical aspect of European countries at a growing rate, with over 480,000 km<sup>2</sup> estimated to be transformed into urban space in the next 30-50 years (Piorr et al. 2011). This sprawl leads, however, to more problems, mainly by creating a new type of space, that is neither urban, nor rural, and in which the public administrations lack the necessary instruments to intervene and to generate development (Ianoş et al. 2016).

The urban-rural interface (U-RI), also called peri-urban area, suburban area, urban-rural fringe, rural area, etc. (Ianoş et al. 2021), represents a unique type of human settlement, originating from the expansion of the city into its surroundings (Conzen 1960) and forming a transition zone between the urban and the rural environments that represents a new landscape in itself (Evert et al. 2010). Between the city, the U-RI and the rural hinterland, there are numerous flows, the population and capital flows being the most widely analysed (Tacoli 1998, Ianoş 2004, Ali and Varshney 2012, Yao et al. 2018), but cultural flows are also present (Repp et al. 2012, Ianoş et al. 2017, Merciu et al. 2019).

One of the main problems the U-RI faces is the fast growth of the population, which often causes problems for the municipalities that cannot provide the basic services at a so fast rate (López-Goyburu and García-Montero 2018), mainly due to the lack of legal and territorial instruments for intervention (Stoica et al. 2010, Suditu et al. 2014). This creates segregation problems and poverty cycles due to the lack of accessibility not only to physical infrastructure, such as transport, electricity, sewage systems, central heating, etc., but also to services like education, medicine, and culture (Ianoş et al. 2010). Those localities that can provide the urban services for the population will attract a higher income class of new residents, while lower income residents will move towards the less developed peripheries or to the ones with a lower environmental quality (Slomp et al. 2012, Ioja et al. 2014, Ianoş et al. 2017).

Culture is frequently associated with sustainable urban development, regeneration, and structural reconstruction (Ianoş et al. 2012, Bakogiannis et al. 2019). One of the predicting factors of the development level related to a settlement situated in the urban environment and the U-RI is the access to culture, because it can trigger sustainable, long-term development (Makropoulou and Gospodini 2016).

Cultural heritage represents the total tangible (monuments, old documents, individual collections, photographs, personal objects, newspapers, books, etc.) and intangible (history, stories, myths, poetry, music, foods, etc.) elements of an area (Corsale and Iorio 2014, Beel et al. 2017, Jenkins 2018). Cultural heritage is widely used as an economic instrument for local development (Felicetti 2016), as it can generate and communicate a strong symbolic meaning through different experiences (Scott et al.

2018), which in turn leads, among others, to a stronger local identity (Bamert et al. 2016), increased incomes at the local budget (Paresishvili et al. 2017), consolidation of administrative and political local power (Amit-Cohen and Sofer 2016), increased local resilience (Ianoş et al. 2014, Beel et al. 2017) and local economic diversification (Randeli and Martellozzo 2019).

Written culture stands on the fundamental act of writing, that itself stands at the intersection between material object, the social norm of contextualising it and the text itself (Lyons and Marquilha 2017). It is one of the main indicators of the level of development of a civilisation since ancient history, where a preliminary form of writing appeared in Sumer and Egypt (Bywater 2013, Lyons and Marquilha 2017). Albeit different, this evolved continuously until the invention of the printing press, when it accelerated in scope and distribution; based on the recent interpretations, it can be considered that a society is not civilised if it does not have writing at its core (Bywater 2013). One of the main solutions for reducing development gaps (including gender gaps) is to promote the improving of literacy inside societies by creating better educational structures shared through social interactions since the 1st grade (Genlott and Grönlund 2016).

Among the benefits of access to written culture we can name social and economic enhancement as follows. From the early progress registered at societal and commercial level by the introduction of mechanical machineries like the printing press (and its subsequent iterations), this shift in the written culture changed from a manual style of labour (actual transcription of text) to an industrial one, by also changing from local to global (De Grammont and Almada 2019). In the present day, access to new technologies is seen among the practices of written culture (Araújo et al. 2019). Moreover, access to written culture and education can act as a driver for creative and innovation sectors (Yiota 2020).

Based on the above, we can state that the main written culture output is the actual book itself. Perceived today at the crossroads of globalisation (via the exchange of titles and authors through translations and the ever-evolving methods of distribution) and new technologies (by evolving and transforming from the print format to an audio, electronic and a mix of experimental formats), the book is seen as a shape shifting object and the main access to getting books for an individual is either via the library or the bookstore (Crosby 2019, Mangen et al. 2019).

However, referring to access, the COVID-19 pandemic led to lockdowns and numerous restrictions all over the world (Murphy et al. 2022). Among the most affected sectors of the economy was the cultural sector. Museums, libraries, books stores, art galleries and other cultural edifices all over the world were closed and forced to move in the online environment (Flew and Kirkwood 2021, Kuźelewska and Tomaszuk 2022).

The gaps between social classes widened as the access to culture was restricted, with the most vulnerable groups lacking access to the internet and technology or having limited skills in using them (Mojapelo 2020, Radermecker 2021). Those groups were also targets of conspiracy theories and lacked the necessary knowledge of differentiating between diverse information sources, or even of accessing the official information (Biddlestone et al. 2020). Amongst the most vulnerable groups in Central and Eastern Europe, there are the Roma people (Crețan and Turnock 2008, Crețan et al. 2020, Méreiné-Berki et al. 2021) but there are also other groups of disadvantaged people who do not have access to written culture (Gratton 2020).

The aim of this paper is to analyse the distribution of development and of accessibility to written culture in the U-RI, to see if there is a correlation between them and if this was widened by the current pandemic crisis. Cultural accessibility was not used before as a possible indicator of territorial development in the areas surrounding cities, this being the reason why those services are almost always among the last to come to the attention of local authorities in the areas affected by urban sprawl when territorial actions are taken (Stoica et al. 2010). There is a need to view access to written culture from a new perspective, correlated with the economic and social development of the U-RI, to understand its importance in reducing the gaps between the richest and the most vulnerable groups and in eliminating the problem of territorial segregation at the peripheries of the urban environment. This perspective has already generated positive changes inside cities (Cercleux and Merciu 2013, Merciu et al. 2019), but those were limited mostly to inner city areas (Vesalon and Crețan 2019), rural areas, or post-industrial sites (Voiculescu and Jucu 2016), with a focus mainly on tangible heritage and/or customs and traditions. The newly populated U-RI areas and the written culture were mostly ignored by scientific analyses, even though they are the most affected by cultural replacement and by the loss of local identity due to urbanisation (Manea 2021). Therefore, our main research question is whether the distribution of written culture accessibility in the U-RI is positively correlated with the local level of development in the wider urban system area.

## **Methodology**

### **Study Area**

The case study method was used to analyse the accessibility to written culture and its consumption in the U-RI. It's important to highlight the influence of the local context over the development of U-RI, in contrast with the national and global backgrounds. In this case, due to the diversity of local factors, it is a futile attempt to evaluate the accessibility and consumption of culture in the U-RI at a national or further global scale (Mortoja et al. 2020). The study area, thus, is represented by Bucharest and the first ring of localities around it (Figure 1). The city was chosen because of its size and its diversity

of peri-urban typologies and dynamics. As of 2021, the National Institute of Statistics (NIS) mentioned that Bucharest has a population of 2,158,169 people, where we also add the population of 287,213 inhabitants of the selected localities around the capital city for this study, thus having into analysis a total of 2,445,382 people. It is important to mention that this data excludes the undeclared residents (without Bucharest or related localities domicile), workers, renters or students who opted not to get a floating visa, thus living informally in the study area. However, we highlight that their number might impact the actual reading or book buying practices.

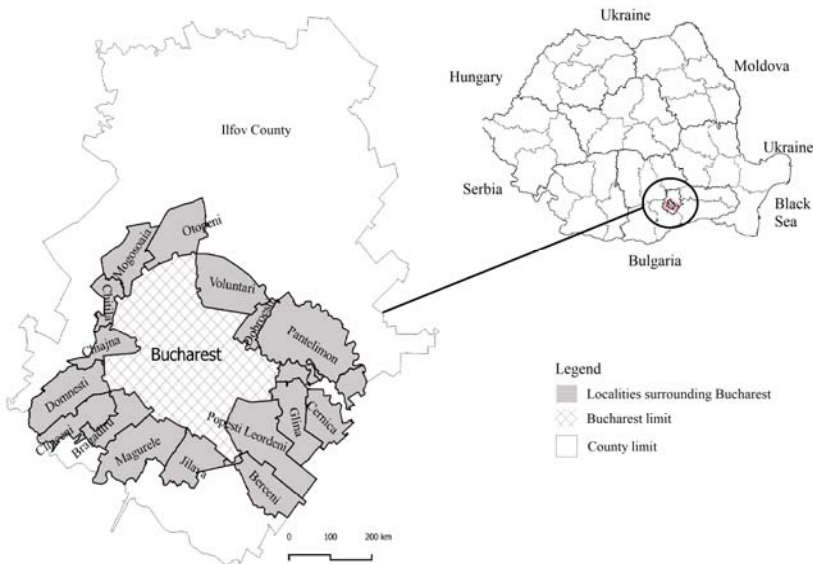


Figure 1. Study area and component localities. Source: ANCPI administrative limits

The evolution of urbanisation and urban sprawl in Romania has a long history that can be divided into different phases, each phase having a dominant direction of expansion and a certain category of population involved and creating a different U-RI typology (Ianoş 2004, Grigorescu et al. 2012, Suditu et al. 2014). In the communist period, population movements were strictly controlled, as well as any local investment. After 1990, with the transition to democracy and a consumerism approach, people got the right to move freely across the country, they recovered their lost properties, and they got the new right of having more than one residence (Ianoş 2004). As Rusu et al. (2020) observed, the free market was the main driving force of urban sprawl after the '90s, leading to open spaces loss, traffic congestion, higher pollution, and other environmental and social issues, such as the loss of place identity (Pătroescu et al. 2011).

Since 1995, the first phase of expansion in the U-RI of Bucharest began through a process of speculation by the acquisition of agricultural fields in the northern side of the capital by its richest residents (Ianoş et al. 2016). In 2000, those fields were

significantly transformed when the new owners began building holiday homes on them, transforming the landscape according to their urban ideal; the new residential areas were concentrated mainly in the northern side of the capital, in Băneasa, Otopeni, Voluntari, Pipera and Balotești (Suditu 2009, Ioja et al. 2014). In 2005, the new urbanism law helped to regulate the new developments (Suditu 2009); investments started to be directed towards multi-family buildings, following the main transport infrastructure and due to the financial accessibility, especially for the middle class (e.g., commune of Chiajna and town of Pantelimon, located near the west and the east main entrances to the capital city) (Stoica et al. 2010, Preda et al. 2022). At the same time, the economic crisis of 2008 brought back to Romania many workers that decided to stay as close to the capital as possible to have more employment opportunities – for them, new collective residential areas at a very low price were developed in localities with a poor environmental quality and/or lacking many basic services (e.g., Glina, Jilava) (Ianoș et al. 2010, Ianoș et al. 2012). After 2015, the urban sprawl continued in the northern direction for the high-income class, but a new direction appeared in the southern part, previously ignored by large developments, where the middle-income population is increasingly attracted (e.g., Popești Leordeni, Bragadiru and Berceni) (Ianoș et al. 2016).

These urbanisation phases of the U-RI comprised analyses focused on landscape and satellite images (Mihai et al. 2015, Ianoș et al. 2016, Stoica et al. 2021), but also indicators such as the purchasing power of the residents, the population increase rate and the living surface per person (Suditu 2009, Suditu et al. 2014), or the economic capital circuits in other cases (Lois González et al. 2016).

The difference in development in the U-RI can be also statistically analysed, using data from the NIS. The recent data show large discrepancies in: the living surface/person – with the northern part characterised by individual large villas, while the southern part has mainly collective buildings (Figure 2a); the population increase rate – the fastest growth being along the highways of Bucharest-Pitești in the east, Bucharest-Ploiești in the north, and Bucharest-Constanța in south-west (Figure 2b); and the average income/month – the richest population moves in the northern part, which is more developed and it has more natural space and amenities, compared with the southern part, where services are underdeveloped and it locates the waste of the capital city which is collected in landfills that affect the quality of the environment (Figure 2c) (Pătroescu et al. 2008).

## Methods and Materials

The present study was conducted using approaches and materials of both quantitative and qualitative nature. Statistical data was collected from the public databases provided by the Romanian NIS, and it reflected the population dynamic of the U-RI, the access to public libraries and written culture consumption, the internet and

computer access and the construction sector in the area. The above-mentioned statistical data was complemented by information from Open Street Maps, Google Maps, the National Library of Romania, and Bucharest's Metropolitan Library, regarding the location of public and private libraries and bookstores. This quantitative data was statistically analysed and processed to determine the correlation between the local development, the population increase rate, the education accessibility and the use and consumption of written data. The analysis was rendered graphically using the Excel program and the Analyse-It extension.

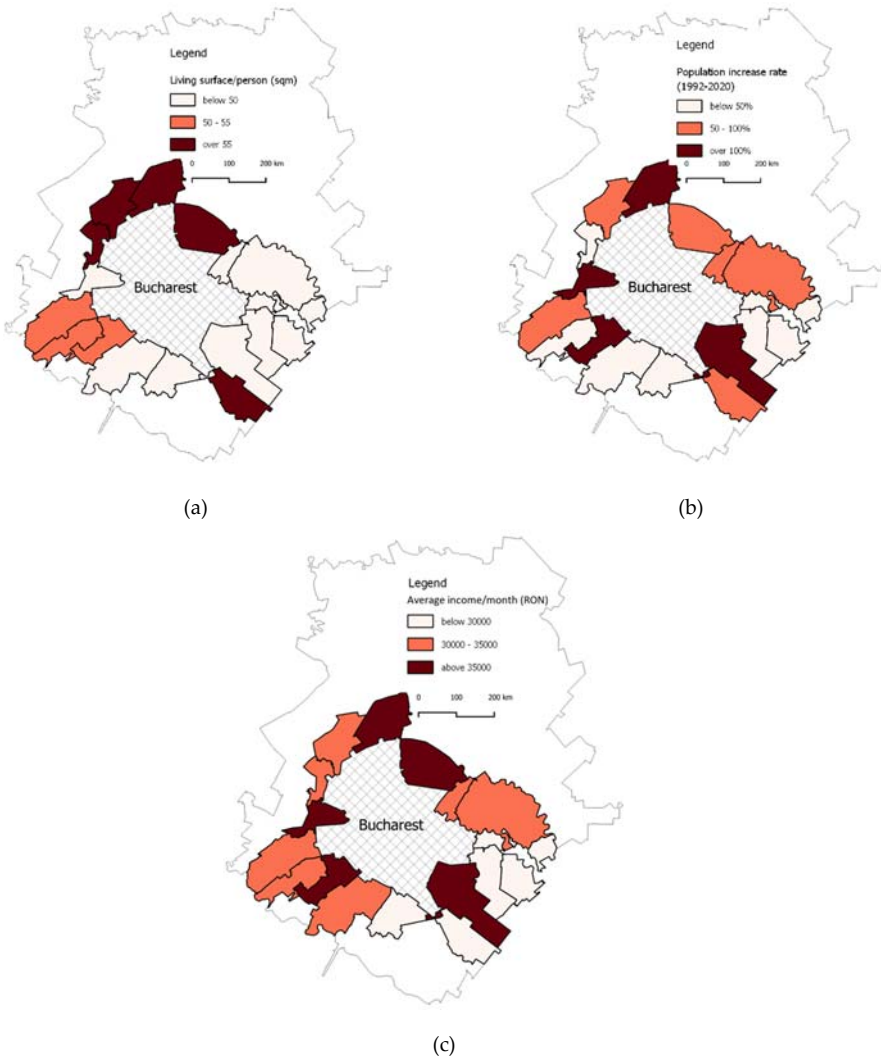


Figure 2. Classification of Bucharest's U-RI localities based on (a) living surface/person in 2020; (b) population increase in the 1992-2020 period; (c) average income/month in 2020. Source: NIS



One limitation of this data is that, during 2020 and 2021, there are no statistics collected regarding libraries, readers, and access to books and written culture, because most institutions were closed during the Covid-19 pandemic. Therefore, for this period, to assess the written culture consumption in the U-RI, a questionnaire was developed. This questionnaire was applied online, on a sample of 203 people, using the Google Forms application (due to its accessibility), and multiplied using Facebook local groups in the timeline of 1-15 August 2021. The questionnaire was structured in three parts, aiming to assess the access to written culture before, during and after the pandemic. So, the current results for bookshops are generated from the data of the Romanian National Institute of Statistics, while the results for literature consumption and the population's perception on the accessibility of written culture are from the applied questionnaires.

Some limitations of the questionnaire are the low response rate in some localities around Bucharest, where the statistical data also shows a higher rate of poverty and underdevelopment (e.g., Glina, Jilava, Clinceni). Also, there are more women than men that answered (Table 1), as they are more open to this kind of social media interaction (in February 2021, 78% of women used social media in the US, compared with 66% of men) (Pew Research Center 2021), while people aged over 65 years old were not represented mostly due to their lack of digital skills (in 2019, across EU, people between 65-74 years old used the internet three times less than the entire group between 16-74 years old) (Eurostat 2021).

Table 1. Profile of respondents to questionnaire

Gender			Age (years)			
Female	Male	No answer	Under 25	25 to 44	45 to 65	No answer
76.35%	23.16%	0.49%	10.34%	68.47%	20.69%	0.49%
155	47	1	30	139	42	1
Studies						
Gymnasium	High school	Professional school	University	Post-university	No answer	
1.97%	16.26%	3.45%	44.84%	33.00%	0.49%	
4	33	7	91	67	1	
Living time in the same locality						
Less than 1 year	1 to 5 years	5 to 15 years	More than 15 years	No answer		
7.39%	24.14%	37.44%	29.56%	1.47%		
15	49	76	60	3		

It is also true that, quantitatively, women read more than men (as they buy around 80% of the novels, except science-fiction, fantasy, and horror books, where men are more avid readers), a figure that made a reputable British newspaper state: "without women the novel would die" (Thomas-Corr 2019). Qualitatively, the reading practice of women is to take time to focus on the understanding of the text, when compared with



men who read hastily (Eman and Youssef 2012). Moreover, there is a strong bias regarding the respondents, as those people who use libraries and bookstores on a regular basis are more probable to respond, than those that had never opened a book in the last few years. Despite these study limitations, the applied questionnaire qualifies as a good method of comparing the accessibility and consumption trends of written culture before and during the pandemic, as well as the main demand trends for the future.

## Results

### Cultural accessibility in the urban-rural interface of Bucharest

When analysing the location of public and private places who provide books (Figure 3), it is clearly observed that the epicentre of accessibility to written culture is represented by the centre of Bucharest (as a note, every library/bookshop is coloured at a radius of 2 km). Although the accessibility to libraries (Figure 3a) is aligned uniformly in all central areas of the capital city, except for peripheral areas, in the interface only in the northern side (Otopeni) we encounter public libraries. On the other side, related to actual bookstores (Figure 3b), we see the area decreasing in size, and the periphery actually taking almost half of the actual map in its lack of access to book shops. The most crowded area is in the west and north part of the capital, with the centre again being the place with the presence of most bookstores. However, hypermarkets and malls provide an alternative to book buying for the residents all over the city. The shopping centres and malls offering books in Bucharest and its U-RI represent selling points that are encountered in all its six sectors, and, acting opposite to bookshops and libraries, they do not share the same location (Figure 3c). On the contrary, in the centre of the capital there are more galleries, museums and art shops, with an exception in Mogoșoaia. Based on the three maps, we can see clearly that the center area is the most important point of access to written culture for the capital city and its surrounding localities.

From 1995 to 2019, according to the Romanian NIS (Figure 4), the number of libraries in the U-RI of Bucharest has fluctuated, with a general decreasing trend. Most libraries are found in Voluntari, which has grown from one library in 1995 (like all the rest of the localities studied here), to 14 libraries in 2018 (in 2019 this number decreased with two), because of the large public investment in cultural facilities from the authorities. Also, there are many private educational units located in Voluntari and which have their own libraries. In 2019, there is only one library in Dobroești, Măgurele, Domnești, Chaijna, Chitila and Mogoșoaia; two libraries in Pantelimon and Clinceni; three libraries in Otopeni, Glina, Popești Leordeni and Berceni; and four libraries in Cernica and Jilava. By comparison, Bucharest, which grew from 387 libraries in 1995 to 441 in 2002, still had a total of 355 libraries in 2019.

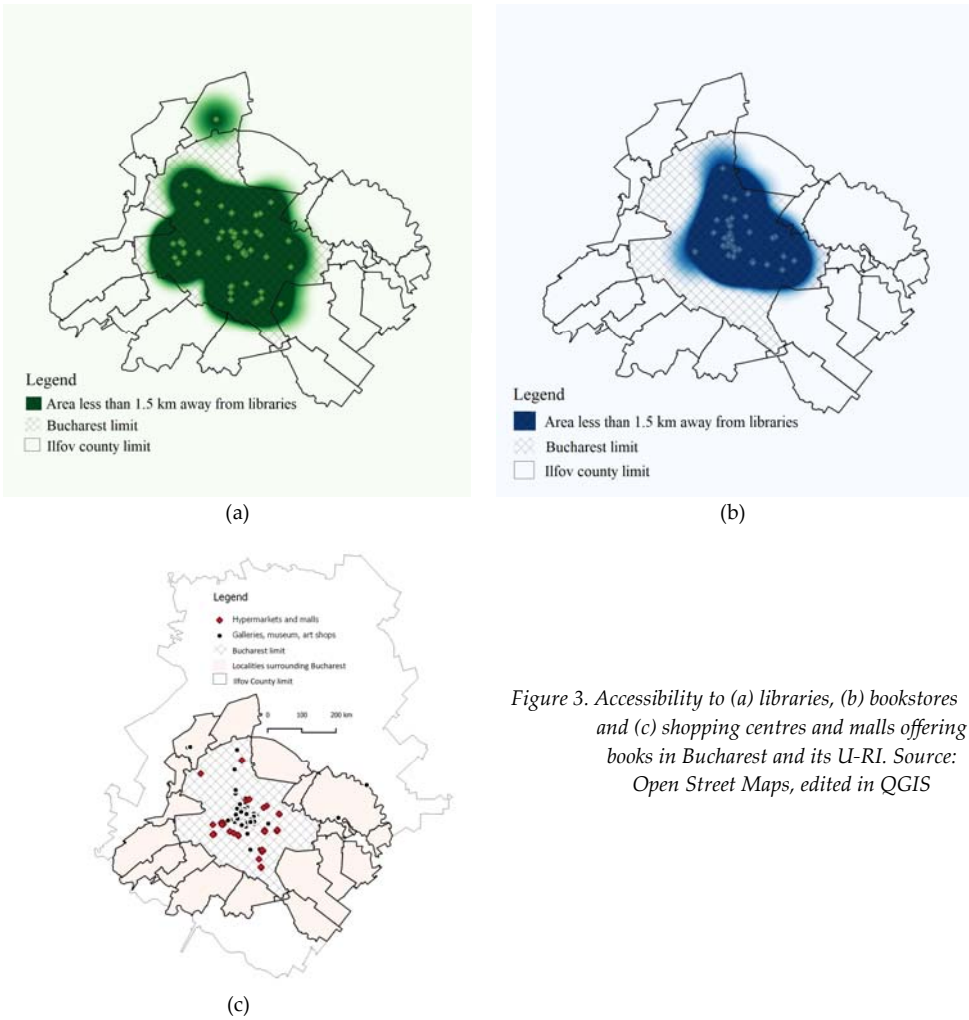


Figure 3. Accessibility to (a) libraries, (b) bookstores and (c) shopping centres and malls offering books in Bucharest and its U-R.I. Source: Open Street Maps, edited in QGIS

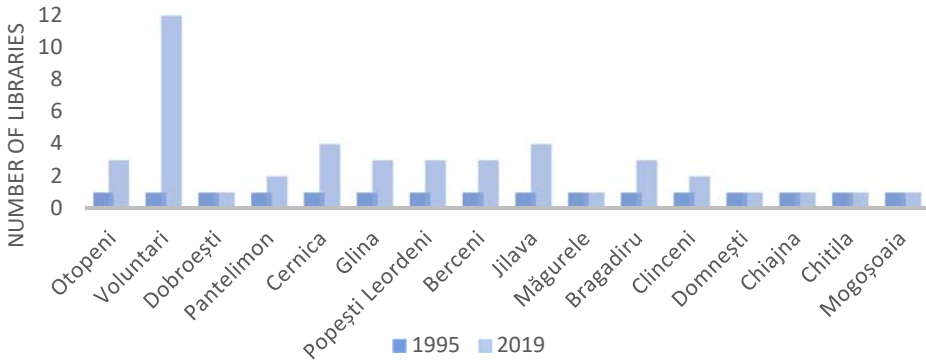


Figure 4. Number of libraries in the U-R.I. of Bucharest in 1995 and 2019. Source: NIS

Although Voluntari has the highest increase in the number of libraries, when referring to the change in the number of books in the libraries from Bucharest and its U-RI in the 2011-2019 period, Cernica has the largest increase, of 220%, followed by Jilava with 145.6% and Domnești with 76.8%. Bragadiru and Berceni are coming next, with a 48.6% and 40.4% increase, followed by Popești Leordeni (22.1%), Voluntari, at a slight difference of 20.5%, and Dobroești (18.5%). The positive change list is closed by Măgurele, with a 11.3% increase, and Pantelimon with 10.1%. On the opposite side, there is a dramatic decrease for Chitila (-70.2%), Glina (-65.8%) and Chiajna (-58.2%, despite its population increase of almost double), with lesser losses for Clinceni (-12.8%) and Otopeni (-6.9%). Surprisingly, Bucharest is on the negative change too, with a decrease of -3.4%.

These differences between localities regarding the number of books reflect the administrative investments, the education levels of the population, as well as the skills and the lifestyle of the new residents of the area. One exception to this is Jilava, where a possible explanation for the increase in the number of books is the existence of the penitentiary, where prisoners can get their sentence reduced if they write one or more books (an activity for which they also require some other book sources).

The positive increases in the total number of books over the years are also seen in the rising number of readers (Figure 5) in localities such as Jilava (600% more readers on a 145.6% increase in the number of books, as seen above), Cernica (195.1%) and Bragadiru (146.5%). Growing numbers of readers have appeared also in Voluntari (56.3%), Măgurele (44.3%), Otopeni (37.9%) and Berceni (35.4%). The smallest increase is found in Popești Leordeni (18.8%). There are more localities on the negative trend regarding the readers than the actual number of books, as seen in Mogosoia (-72%), Glina (-60%), Chiajna (-54%), Dobroești (-48.6%), Clinceni (-47.2%), Domnești (-41.2%), Chitila (-22.2%) and Pantelimon (-13%). Bucharest is at a decrease of -23%, with an average for the total interface of a still positive 25% trend, but not as high as the first localities. This might be an indication of a less place-dependent consumption of written culture in those localities, with the transition to the use of virtual bookstores and new book formats instead of physical libraries, which are scarce and usually not updated with the newest books required by the population.

In terms of books borrowed per reader (Figure 6) in Bucharest and its U-RI in the 2011-2019 period, Dobroești has the record with 20.4 in 2011 and 16.2 in 2014, but it has a decrease to only 5.5 books in 2019. This trend is generally available to all localities. It is a decreasing trend generally, although in some localities (e.g., Popești Leordeni) it is more constant than in others (e.g., Bragadiru, Chitila, Mogosoia), where the decrease is considerable.

Regarding the accessibility or the desire to have access to a library in the Bucharest's U-RI (Table 2), the questionnaires showed that there is a general trend of decrease

between 2019 and 2020, with the highest gaps being in Pantelimon (29.6 in 2019 versus just 3.7% in 2020), Otopeni (50% versus 10%), Berceni (25% versus 8%), Chiajna (46.7% versus 13.3%) and Mogoșoaia (33.3% versus 13.3%). There are stable examples, like Domnești (33.3% in both years), Popești Leordeni (12.5%), Cernica (25%) and Bragadiru (14%), and exceptions where we see an increase (e.g., Jilava which doubled from 20% to 40%, and Clinceni with a small increase from 20% to 25%).

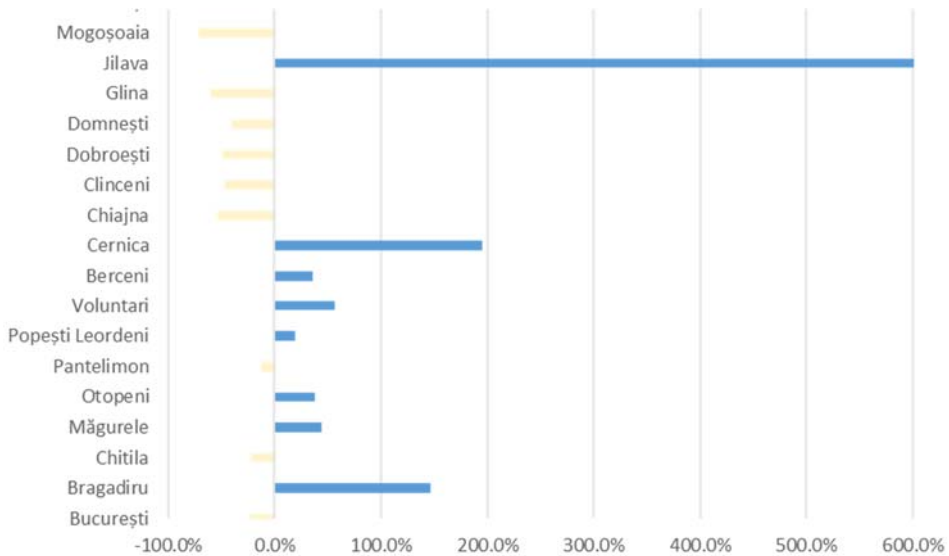


Figure 5. Dynamics of the number of active readers in Bucharest and its U-RI in the 2011-2019 period. Source: NIS

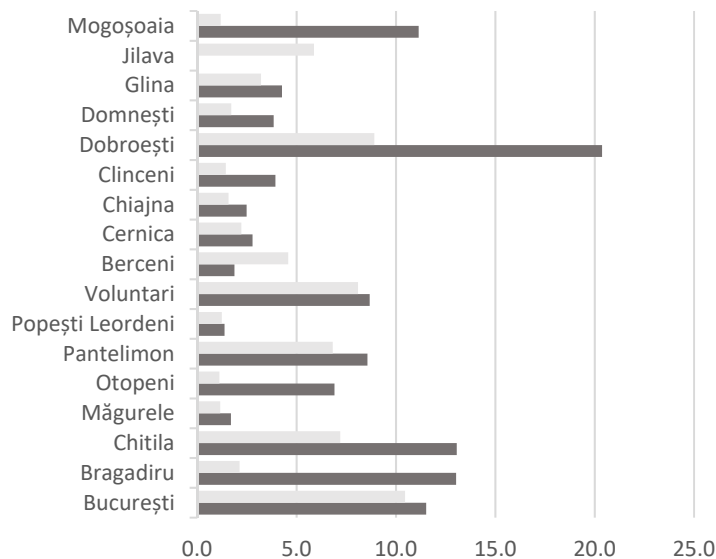


Figure 6. Books borrowed per reader in Bucharest and its U-RI in 2011 and 2019. Source: NIS

Table 2. Percentage of respondents that had access to a library or wished to have access, in 2019 and 2020, and that ordered at least one book online before the pandemic in Bucharest's U-RI

	People that went to a library		People that wished that they had access to a library		Books ordered online before the pandemic
	2019	2020	2019	2020	
Berceni	25%	8%	47%	43%	94%
Bragadiru	14.0%	14.0%	71.42%	42.85%	100%
Cernica	25.0%	25.0%	75.0%	50.0%	75.0%
Chiajna	46.7%	13.3%	46.7%	40.0%	66.7%
Chitila	50.0%	50.0%	50.0%	50.0%	50.0%
Climceni	20.0%	25.0%	80.0%	60.0%	80.0%
Dobroești	0.0%	12.5%	50.0%	25.0%	50.0%
Domnești	33.3%	33.3%	33.3%	33.3%	100.0%
Glina	0.0%	0.0%	50.0%	0.0%	50.0%
Jilava	20.0%	40.0%	80.0%	40.0%	60.0%
Măgurele	14.3%	7.1%	28.6%	21.4%	64.3%
Mogoșoaia	33.3%	13.3%	46.7%	33.3%	93.3%
Otopeni	50.0%	10.0%	20.0%	20.0%	50.0%
Pantelimon	29.6%	3.7%	37.0%	44.4%	70.4%
Popești Leordeni	12.5%	12.5%	43.8%	25.0%	81.3%
Voluntari	26.3%	15.8%	63.2%	68.4%	73.7%
Average	25%	18%	51%	37%	72%

Source: processed data from the questionnaires

Regarding the persons who wished that they had access to a library (Figure 7), the trend resembles the first iteration of the actual access in terms of decrease, however the percentages are higher in comparison. For example, in Bragadiru, 71.42% of the respondents wished that they had access to a library in 2019, versus 42.85% in 2020; in Cernica, the difference is between 75% and 50%, while in Clinceni, between 80% and 60%. Like in the first situation, there are cases of stagnation, such as Chitila (50% in both years), and Otopeni (20% in both years) and two cases of increase (e.g., Pantelimon from 37% to 44.4% and Voluntari, with a small increase from 63.2% to 68.4%).

On the opposite side, regarding the actual lack of physical access in getting books, there is a general trend of buying books online as a preferred method of getting access to written culture, with Bragadiru and Domnești having each a 100% rate, while just 14%, respectively 33% percent of their inhabitants were using the library system in 2019, even before the pandemic. The data from all localities show at least 50% of people choosing to order books online, with percentages scoring higher in some of them (Berceni 94%, Mogoșoaia 93.3%, Popești Leordeni 81.3% and Clinceni 80%). Overall, this is the highest average for getting access to books, 72% of the total respondents choosing this method, in contrast with the actual average access to libraries of 25% in 2019 versus the lower 18% in 2011.

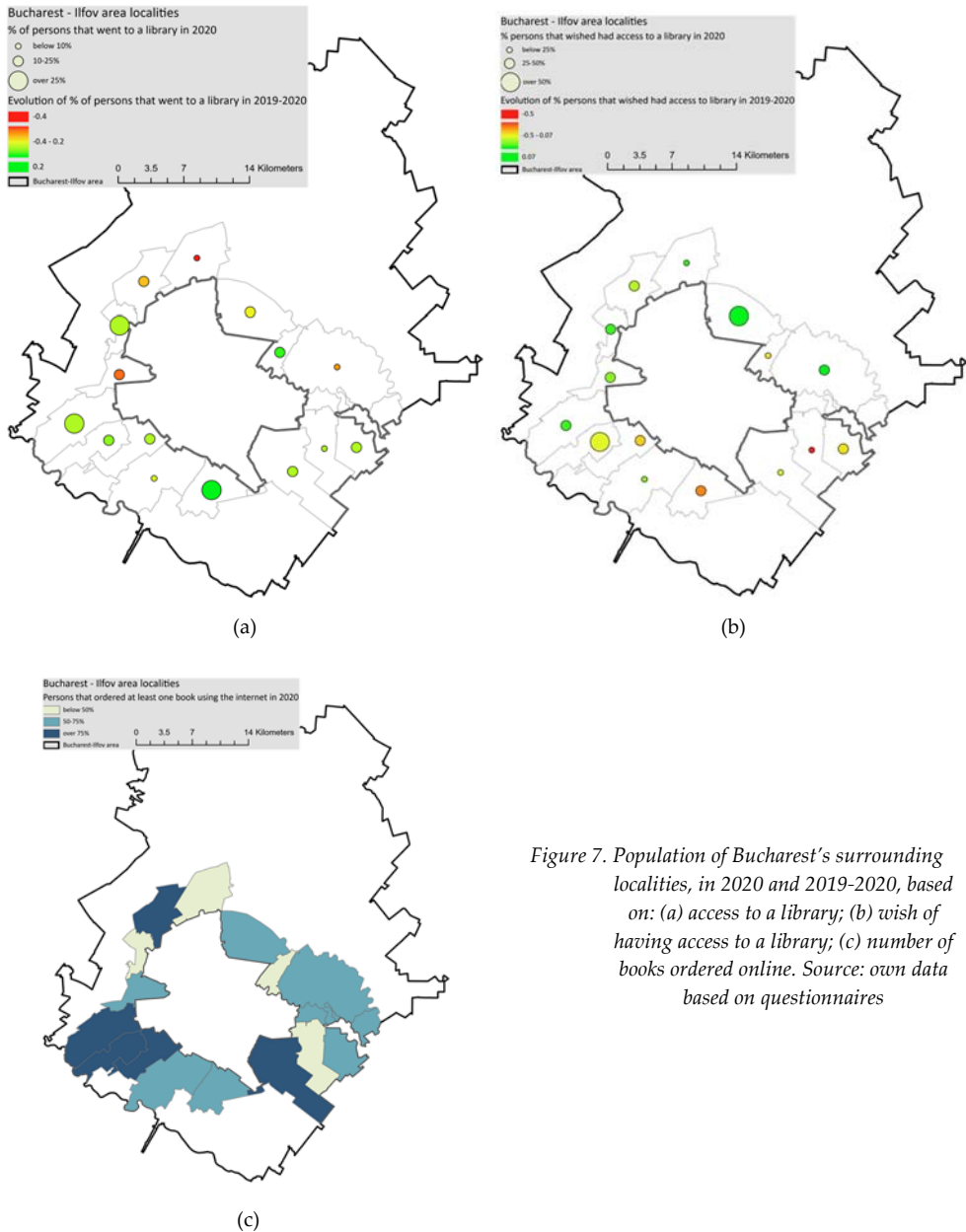


Figure 7. Population of Bucharest's surrounding localities, in 2020 and 2019-2020, based on: (a) access to a library; (b) wish of having access to a library; (c) number of books ordered online. Source: own data based on questionnaires

The data reflect the skills of the readers, as most showed abilities to use the internet and the online sources for acquiring books even before the pandemic. With the increase in the online sources and the movement of libraries and bookstores in the online environment after the closing of their physical locations, most previous readers did not feel the need for those facilities as they could get new books from the comfort of their homes.

In the Bucharest's U-RI, the questionnaires also showed a decreasing trend (Figure 8), with an average of 15.38 versus 12.23 books read in 2019 versus 2020, with the highest average in Bragadiru (20.14 in 2019 and 17.29 in 2020), followed by Mogoşoaia (20.6 versus 17.4) and Popeşti Leordeni (17.88 and 13.25).

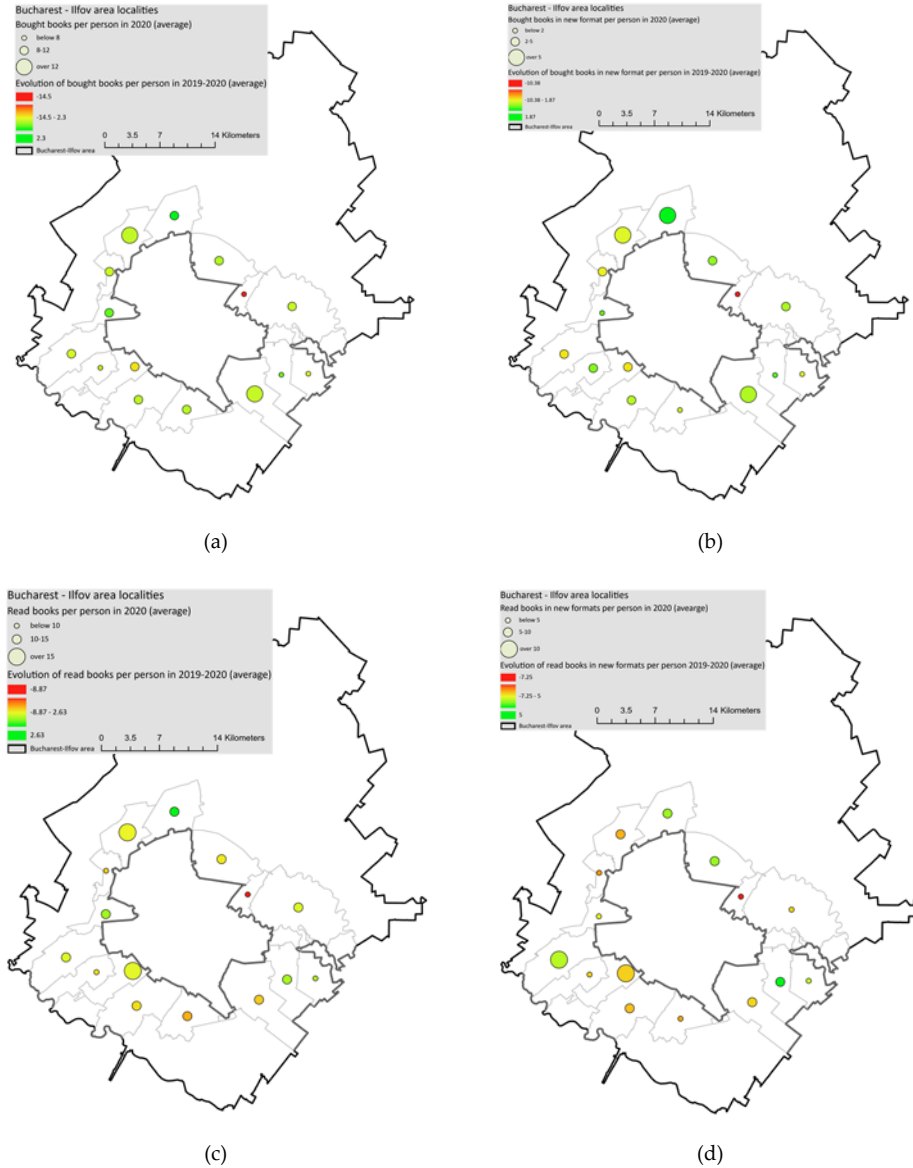


Figure 8. Average number of books: (a) bought, (b) bought in new formats (e.g. e-book, audiobook), (c) read, (d) read in new formats, in Bucharest's surrounding localities, in 2020 and 2019-2020. Source: own data based on questionnaires



Regarding the books in a new format (e-book, audiobook or even books as podcasts), the highest number per person is still in Bragadiru, with 14.57 in 2019 and 12 in 2020, and the lowest number in Chiajna, with 5.2 in 2019 and 4.53 in 2020. Overall, the average is surprisingly decreasing, despite the limited access to bookshops and libraries, being 7.93 in 2019 and 6.03 in 2020. However, regarding the practice of buying books, the numbers are a little lower, the average being 14.14 in 2019 and decreasing to 9.89 in 2020, due to the lockdown and other unstable events in the book market that heavily affected the related industry in Romania. In 2020, the Romanian Association of Publishers announced a decrease of over 70% in the book trade value (Iancu 2020). Regarding the books bought in a new format, again, the numbers are low, with 6.38 in 2019 and just 3.50 in 2020, probably because of the increase in the platforms offering books in new formats for free (e.g., Humanitas library in Romania offered 45 free e-books in the first months of the pandemic).

Regarding the access to culture during the Covid-19 pandemic compared with the year before, in the perspective of the residents of Bucharest's U-RI (Figure 9), 45% had the

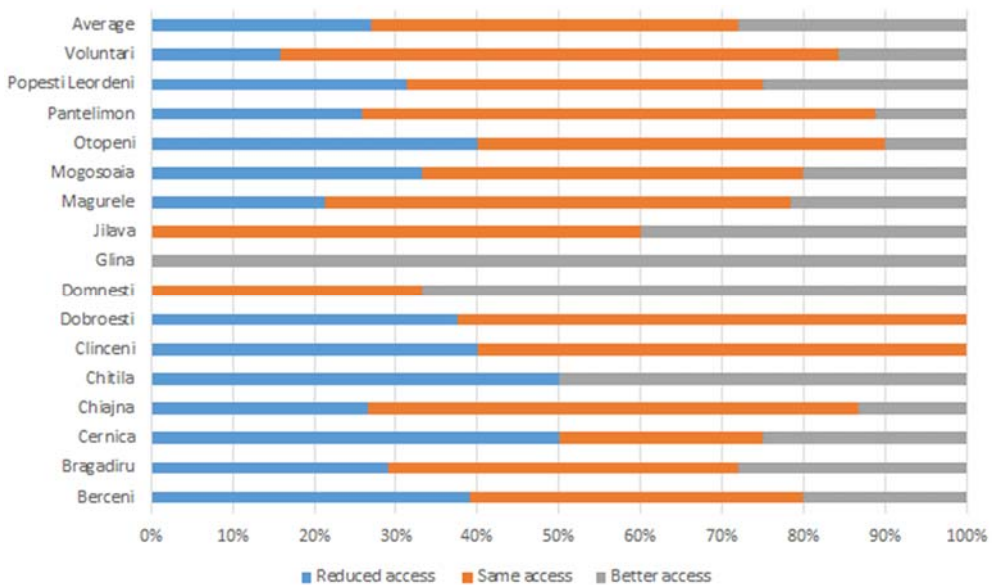


Figure 9. Access to culture during the Covid-19 pandemic compared with the year before, in the perspective of the residents of Bucharest's U-RI. Source: data from questionnaires

same access, while 28% had better access and 27% a reduced access. Cernica and Chitila had the highest reduced access of 50%, while Voluntari (68.4%) and Pantelimon (63%) had the same level, with better access for Gîlna (100% and Chitila (50%). This also reflects the development level of localities: (a) the ones that attracted a high-income population before the pandemic saw no difference because the residents relied on the online sources for access to written culture; (b) those with a middle-income population showed an increase of accessibility during the pandemic with the highest number of

book acquisition methods and the highly developed digital skills of the population; while (c) those localities with a low-income population showed a decrease in accessibility due to the movement of cultural services in the online environment and the general lack of digital skills of their residents.

### **Written culture accessibility as a possible indicator of urban sprawl and segregation**

A Pearson correlation analysis of the quantitative (statistical) and qualitative (questionnaire gathered) data with the local purchasing power was attempted. The local purchasing power was chosen as the indicator of local development because it reflects not only the economic prosperity of the localities, but also the social structure of the U-RI. The analysis showed a high multiple R for all the three analyses (only quantitative, only qualitative and all data), with values higher than 75%, indicating that the variation in the purchasing power can be explained by the variation in the written cultural accessibility and usage. However, the p-values were greater than 0.05, which indicates that there is insufficient data to draw a conclusion, mostly due to the low sample of localities and their high local diversity.

The correlation analysis, although inconclusive due to the high p-values, shows that the purchasing power is positively correlated with almost all indicators that we extracted for measuring cultural accessibility and consumption (Table 3). This also shows that there is a strong positive correlation between the number of libraries, the number of available books and the number of readers, which is encouraging for those administrative units that want to invest in providing more such facilities (Figure 10a). Regarding the importance of bookstores, there is a strong correlation between the number of books bought and read, so again providing book purchasing facilities and places can lead to major improvements in this aspect (Figure 10b). The final correlation monoplots showing all indicators and the relationship between them (Figure 10c) displays that: (a) there is a positive correlation between the purchasing power and the use of new book formats (e-book, audiobook, etc.); (b) there is a negative correlation between the increase in population and the increase in the number of readers; and (c) there is a negative correlation between the number of books existent in the libraries and the number of books bought by the people from bookstores. This indicates that bookstores and libraries are to a great extent in competition, so it would not be advisable to do major investments in both, as the same result can be achieved only through the means of one. Also, the local administrations could not keep up with the increase in population regarding the provision of access to written culture, as the poor or uneducated population is the main source of demographic increase in the peripheries, and the high-income population no longer depends on the local authorities to provide access to literature, using the newly formats of publication which are no longer dependent on a physical location.

Table 3. Pearson's correlation  $r$  values between all indicators used in the analysis  
(quantitative and qualitative data)

Pearson's $r$	Purchasing power	Population increase	Increase in bought books	Increase in read books	New formats bought books	New formats read books	Bought books	Read books	Increase in readers rate	Books borrowed per reader	Readers	Books number	Libraries	Existing volumes	Bought volumes
Purchasing power	-	0.661	0.387	0.355	0.593	0.565	0.103	-0.009	-0.264	0.021	0.467	-0.387	0.071	0.084	0.185
Population increase	0.661	-	0.046	0.199	0.318	0.460	0.023	0.315	-0.156	-0.161	-0.136	-0.221	-0.136	-0.180	-0.170
Increase in bought books	0.387	0.046	-	0.828	-0.101	0.208	-0.290	-0.158	-0.084	-0.455	0.531	-0.352	0.074	-0.052	0.047
Increase in read books	0.355	0.199	0.828	-	0.015	0.288	-0.321	-0.047	-0.121	-0.560	0.489	-0.083	0.032	0.032	-0.097
New formats bought books	0.593	0.318	-0.101	0.015	-	0.688	0.600	0.167	-0.336	0.208	0.194	-0.071	-0.062	0.101	0.045
New formats read books	0.565	0.460	0.208	0.288	0.688	-	0.357	0.461	-0.450	-0.019	0.097	-0.440	-0.146	-0.180	-0.092
Bought books	0.103	0.023	-0.290	-0.321	0.600	0.357	-	0.554	-0.140	0.170	-0.284	0.099	-0.118	-0.156	-0.049
Read books	-0.009	0.315	-0.158	-0.047	0.167	0.461	0.554	-	-0.067	-0.287	-0.512	0.008	-0.120	-0.346	-0.251
Increase in readers rate	-0.264	-0.156	-0.084	-0.121	-0.336	-0.450	-0.140	-0.067	-	0.036	0.125	0.679	0.284	0.068	0.100
Books borrowed per reader	0.021	-0.161	-0.455	-0.560	0.208	-0.019	0.170	-0.287	0.036	-	0.094	-0.137	0.197	0.241	0.446
Readers	0.467	-0.136	0.531	0.489	0.194	0.097	-0.284	-0.512	0.125	0.094	-	0.002	0.583	0.644	0.624
Books number	-0.387	-0.221	-0.352	-0.083	-0.071	-0.440	0.099	0.008	0.679	-0.137	0.002	-	0.220	0.245	-0.010
Libraries	0.071	-0.136	0.074	0.032	-0.062	-0.146	-0.118	-0.120	0.284	0.197	0.583	0.220	-	0.848	0.894
Existing volumes	0.084	-0.180	-0.052	0.032	0.101	-0.180	-0.156	-0.346	0.068	0.241	0.644	0.245	0.848	-	0.857
Bought volumes	0.185	-0.170	0.047	-0.097	0.045	-0.092	-0.049	-0.251	0.100	0.446	0.624	-0.010	0.894	0.857	-

## Access to Written Culture as Indicator of Economic Development

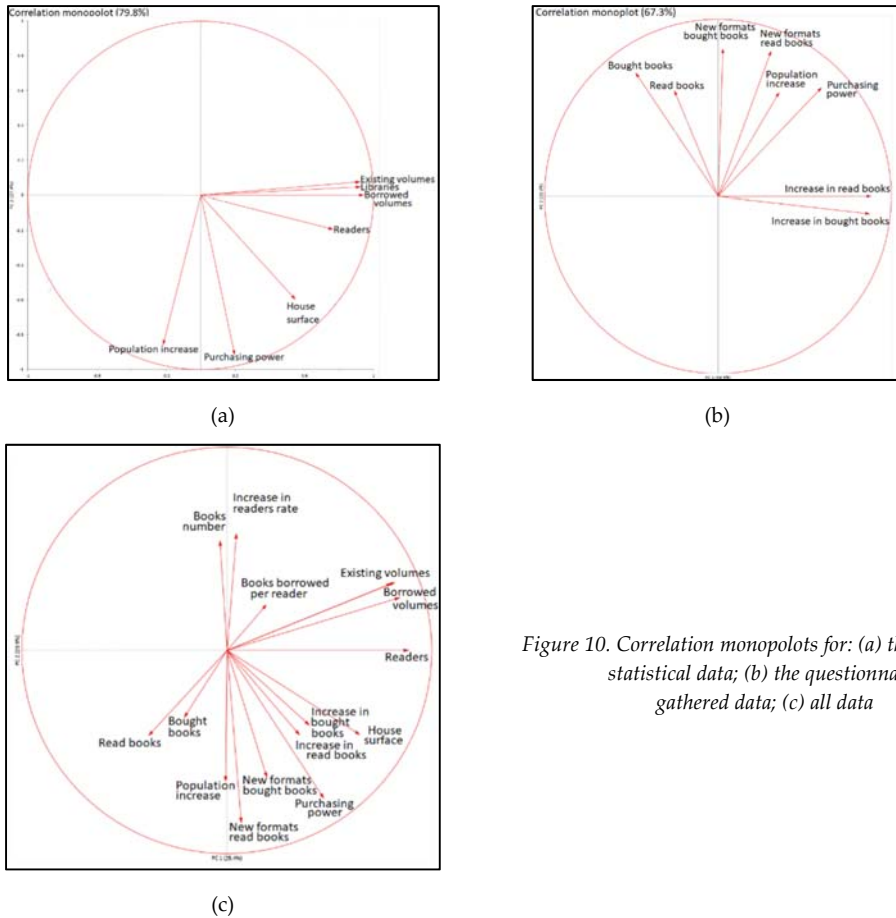


Figure 10. Correlation monoplots for: (a) the statistical data; (b) the questionnaire gathered data; (c) all data

By using the Principal components analysis (PCA), even though it is not statistically relevant to make predictions regarding the impact of written culture on local development, some clusters can be observed (Figure 11). This way, the similarities between different localities can be highlighted:

- Bragadiru and Chiajna are different from all other suburban communities, as they gained the most population and, at the same time, they fell behind with improving their accessibility to written culture. The new residents keep their customs and their urban lifestyles, so they continue reading on a constant basis, but they are partially dependent on the city for this service.
- Chitila, Clinceni, Măgurele, Pantelimon, Glina and Dobroești form another cluster. Those are the U-RI localities that do not meet their true potential regarding development. They lack not only access to culture, but also access to infrastructure and other basic services, so they are completely dependent on Bucharest from this point of view. However, the population

in this area is strongly connected to Bucharest from an infrastructural point of view, which alleviates the lack of local resources.

- Jilava and Cernica are the poorest of the analysed localities and the ones with the smallest population increase. Also, they are the latest in all development indicators, and the written cultural accessibility and usage.
- Berceni, Domnești, Popești Leordeni and Mogoșoaia are newly developed localities in the U-RI, with a very good accessibility towards the capital and a high use of cultural facilities. The middle-class population of the area is concentrated here, and they use literature on a constant basis.
- Otopeni and Voluntari are the outliers on all statistical data. They have a high-class population, as they developed as business clusters. They provide the inhabitants with a high number of libraries and bookstores, the population reads constantly, and they do not depend on Bucharest for providing written cultural services.

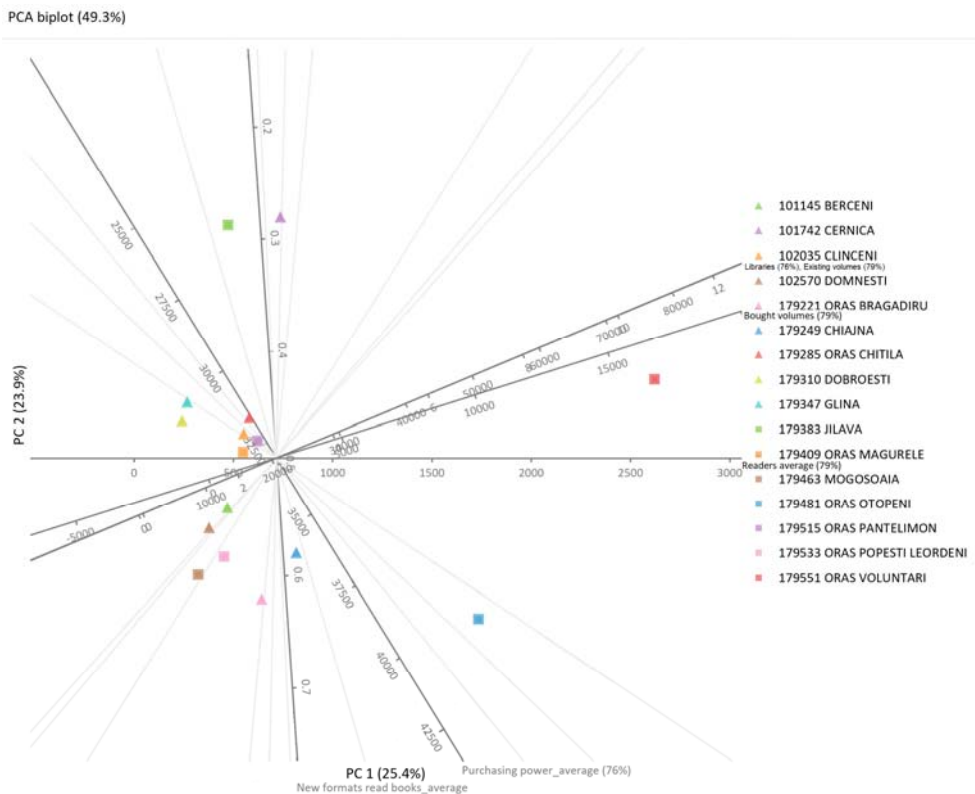


Figure 11. PCA analysis for the statistical data and the questionnaire gathered data

## Discussion

In Bucharest's U-RI, the main findings of analysing the statistical data regarding the libraries, the readers and the existing volumes is that peri-urban localities had not considered written culture a priority and they are dependent on the capital city for providing this cultural service. The number of active readers of libraries is decreasing in both the city and its interface, which can be a possible indicator of a loss of interest in reading in physical form, influenced by other mediums like internet streaming, television, e-books, podcasts, etc. Also, the number of books available per reader in the U-RI interface decreased in the last decade, as well as the number of books borrowed/reader. There is a very large gap between the consumption of literature in Bucharest and in its surrounding area, with over 98% of the readers living in the area being from the capital, and only 2% from the U-RI. This can be explained not only by the differences in the total population and the accessibility to libraries, but also by the number of bookstores and the quantity and quality of educational services.

Another finding that can be observed from both the statistical data and the questionnaire answers is that bookstores and libraries are competitors and investing in providing services of both will not produce significant differences from investing only in one. Also, literature and written culture are no longer place-dependent services, with most people using the online environment for buying books even before the pandemic, a trend that accelerated after 2020. Moreover, the pandemic increased the consumption of books in new electronic formats (e-books, audiobooks, podcasts, etc.), which makes the need for a physical infrastructure less necessary for increasing the accessibility to culture (Nguyen et al. 2020). This increase was stronger in those localities with a high-income population, which further deepened the gap between the different areas of the U-RI.

However, the level of written culture consumption can partially explain the purchasing power of the population of a given area, those being directly correlated. As shown by the results of this analysis, the economic differences between the different localities of Bucharest's U-RI are also reflected in the number of readers, but there is a negative correlation between the increase in the number of readers and the increase of population. This suggests that it is important for the local authorities to attract a population with the habit of reading and that the reduced access to written culture services determines a decrease in the number of users.

## Conclusions

The urban-rural interface is a place of strong and fast transitions, with a strong dynamic and powerful economic, demographic, cultural, etc. flows, caused by differential land rents, industrial location, and communication networks (Mohammadi

et al. 2012) However, it is also a space where segregation on different criteria can be observed, based on the level of development and the quality of services in each area. The access to written culture and its consumption are indicators of local development. The number of libraries, bookstores, books, and readers are all relevant in order not only to predict the standard of living, the purchasing power, and the educational level of a population, but also to explain the attractiveness/repulsiveness of certain places for some categories of population.

Cultural services, including the written format, are concentrated in the polarising city, creating a strong dependence for the surrounding neighbourhoods. This dependence is increasingly lower since the Covid-19 pandemic due to the increased use of online means for accessing culture (Yeo 2020). Audiobooks, e-books, and podcasts are only some of the new media formats that are replacing the written form of culture, especially in places with a low accessibility to libraries and bookstores.

Last but not least, the local authorities play a very important role in the level of written cultural accessibility and consumption through investments in education, activities supporting these investments, and other means of building the habit of reading among the community. The reason for investing in cultural services is because they are positively correlated with the level of education, the competencies and skills of the workforce, and the general development of the locality.

Although more case studies and data need to be considered for the correlation analysis, this study represents a first step forward in recognizing the role of written cultural access and consumption for the local development level in areas outside cities.

To conclude, the urban-rural environment and localisation impact the access to written culture, however with the current transformation in their distribution and publication format, books can become more accessible, irrelevant to the population's current location. Until then, the U-RI will maintain its dependence on the polarising city for accessing written cultural services, unless local investments are being made to promote these cultural services that are usually ignored by the local authorities.

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