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# THE IMPACT OF DIGITAL TECHNOLOGY USE ON YOUTH SENSE OF COMMUNITY: A CASE STUDY FROM CROATIA

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**Abstract:** *The question of how digital technologies, especially the use of the Internet, affect young people's lives is one of the central research topics in contemporary sociology. On the one hand, the positive effects of digital technologies, enabling the emergence of online communities, are highlighted. On the other hand, there are also many negative effects, especially the fear of alienation. Based on the results of research conducted with 552 third and fourth grade high school students in Vukovar-Syrmia County (Croatia), this paper examines how social networking, frequency of digital technologies use, and technologically-mediated socializing influence attitudes towards the local community. It has been shown that the frequency of using digital technology does not have a negative effect on the sense of community, on the contrary – the use of mobile phones is positively correlated to support and emotional connection with peers. However, the tendency to use technology for socializing has a significant effect on two of the three measured dimensions of sense of community, in the way that young people who prefer to establish and maintain online relationships are less close to the local community. The findings support previous studies indicating multiple and varied effects of digital technologies, particularly the Internet use, on local social relationships. It has also been shown that the use of digital technologies had a much stronger effect on the assessment of attitudes towards peers in the community than in other studied dimensions of sense of community – support and emotional connection in the community and satisfaction of needs and opportunities for involvement.*

**Keywords:** *digital technologies, Internet, young people, sense of community, technologically-mediated socializing*

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## Introduction

*“It is obvious that media reach all pores of everyday life, shaping and deeply influencing social relationships. But, the question is how they do that. What are the real consequences of living in a hypermediated world?”*

(Alexander, Thompson, Desfor Edles,  
Capous-Desyllas, 2020, p. 108)

The question posed by Alexander and his colleagues is also asked by many other researchers. They want to find out how media and digital technologies shape our daily lives. For example, how the use of technology affects the impression of the acceleration of time or the reconceptualization of the near-far relationship. In recent decades, much attention has been paid to the extent to which the widespread use of the Internet and mobile phones affects social relationships and thus participation in local community life. This is not surprising, given the results of a study conducted by the Pew Research Center in the USA, according to which 84% of people use the Internet, and in the young adult population, the percentage reaches as high as 96% (Alexander et al., 2020, p. 108). One result is particularly interesting: 24% of teenagers are "almost always" online. It should come as no surprise that researchers are focusing on the way technology is affecting the lives of young people, sometimes referred to as "digital natives." This term is used to describe young people who socialize using digital technologies, which are part of their everyday lives. In a way, "digital natives consider the digital world of modern information technologies their home" (Spitzer, 2018, p. 156). It might be interesting to mention that numerous terms have been used to describe this new phenomenon, which has significantly changed the patterns of work, as well as free time. Papers talked about virtual reality, virtual space, virtual communities, and cyber and digital environment. But by the 1990s, scholars began to argue about the impact of digital technologies on social life. They tried to explain to what extent the use of digital technologies facilitates and enhances human relationships and to what extent it complicates them or reduces the importance of sociality in the real, physical world.

The first part of this paper, therefore, explains two contrasting views of the impact of digital technologies on social relationships, simply referred to as digital optimism and digital caution.

The second part presents the results of an empirical study conducted at the end of 2021 with third and fourth grade high school students in Vukovar-Syrmia County. The objective was to determine the way in which the frequency of using digital technologies and the tendency for technologically-mediated socializing are related to attitudes towards the local community.

## Local Communities, Social Relationships and The Spread of Digital Technologies

Quality relationships in a local community and young people's sense of belonging have a positive impact on various aspects of young people's social life and development,

according to numerous authors. It is believed that in order to develop their potential, young people need "a community that helps them develop positively and supports them in their efforts to become healthy and resilient individuals" (Jandrić, 2005, p. 3). Communities that provide lots of opportunities and content, with healthy relationships where young people feel accepted, enable them to develop positively and reduce the likelihood that they will engage in antisocial behaviour. In addition, young people who are involved in the life of their local community are thought to want to continue living there or return after graduation, which is extremely important for smaller rural communities as well as those affected by negative demographic trends (Chew, LaRose, Steinfield, Velasquez, 2011). Empirical research on sense of community has almost always found that more positive views of various dimensions of community life are related to subjects' well-being (Stewart and Townley, 2020).

At the same time, the prevailing view in recent decades is that the spread of digital technologies is leading to changes in our attitudes towards the local community, as well as the way we perceive and maintain social interactions. Meyerowitz writes, "We are now more likely to understand our place not just as community, but as one of many possible communities in which we could live" (2005, p. 23). It is therefore important to consider how one interprets the impact of digital technologies on social relations and local community. We believe that two positions can be distinguished: digital optimism and digital caution.

Authors who advocate digital optimism believe that the spread of digital technologies has a positive effect on building and maintaining social relationships in the modern world (Jones, 2002). The Internet enables networking with people with similar interests, but it can also have a positive effect on family relationships, for example, when family members do not live together (Kokorić Blažeka, 2020). In such situations, technology helps them maintain communication and closeness. Moreover, the Internet is becoming a medium for meeting new friends and partners.

It is also interesting to observe how digital technologies have influenced the reconceptualization of one of the fundamental sociological concepts, that of community. Communities have long been studied as territorial communities, after which their meaning expanded to include interest communities, a term used by some psychologists that we believe would be better referred to as lifestyle communities, in line with sociology (Scannell and Gifford, 2010, p. 4). As globalization processes become more powerful digital technologies evolve, the crucial role of location in community formation is slowly weakening. In the new connected environment, communities can emerge and exist regardless of location and create efficient relationships within the network, which was impossible in the past (De Meulenaere, Courtois, Ponnet, 2021, p. 483). In recent decades, the term "virtual communities" has attracted much attention after it was popularized by H. Rheingold. He emphasized the problem of the disappearance of informal places of gathering in modern cities (Robins, 2001). He therefore believed that virtual reality can provide solutions to the worrying state of the real world.

Other authors also believed that online relationships can compensate for the shortcomings of the real world and facilitate the formation of social relationships. According to M. Chayko, "the internet and digital media readily inspire and facilitate the creation and establishment of communities" (Chayko, 2016, p. 46). She understands that not everyone tends to build strong social connections online. Therefore, she uses

the term "cyber-asocial" to describe people who find it difficult to initiate online interactions or who do so rarely. However, this should not be taken to negate the many positive possibilities for connecting online.

More to the point, the current circumstances are an opportunity for human sociality to come to life in new and higher quality ways than before. D. Schuler believes that the communities that are now forming must surpass the traditional communities that were problematic in many ways. While the old communities were homogeneous, exclusive, and inflexible, the new communities must be democratic (Jones, 2002:10). According to Rheingold (1993), these new communities play an important role in socialization by being a source of information, values, and practices for their members, and by guiding social organization in this virtual world. However, for such a community to be sustainable, it is not enough for it to simply exist. It must provide quality information and services to its members and offer a wealth of interactions and activities in both the virtual and physical worlds (Lin, 2007, p. 120). Here, virtual communities are not in opposition to physical communities; they are their extensions and links to the physical world. In this context, hybrid communication appears and connects physical reality with cyberspace. G. Cardoso was one of the first researchers of the above phenomenon. He concluded that there is a close interaction between physical and virtual sociality and that together they create a new form of socialization, social organization, and lifestyle (Castells, 2001, p. 131). The acceptance of this new space, with its dynamics between online and live communication, creates a need for its determination. Cabitza and co-authors (2016) call this new phenomenon "hybrid communities," defining them as communities in which the Internet drives member interactions that can exist in both cyberspace and the real, physical world. Thus, it is becoming increasingly clear that technologies not only facilitate the formation of new social relationships, but can also have positive effects on local community life. Hampton and Wellman (2000) presented one of the first examples of such a positive impact: the "Netville" suburbs, where citizens have free access to the Internet. Internet use was shown to lead to an increase in the number of strong and weak ties in the suburbs and outside of the suburbs, resulting in greater sociality in the local community and increased community participation among users.

Capece and Costa (2013), using the example of a community using the virtual platform "M8", concluded that the activity in the use of said platform correlated with the level of participation in the life of the local community. Members who searched for and posted content were more likely to be involved in community issues. In addition, studies have shown that participation in virtual communities can lead to greater involvement in the local community (Casalegno, 2000; Kavanaugh and Patterson 2001; Dearden and Walker 2003) and that Internet use can increase interest in local issues (Kavanaugh, Carroll, Rosson, Zin, Reese, 2005).

However, many other studies urge caution when it comes to the impact of digital technologies on social relationships, emphasizing the negative consequences of too much digital contact. Research has shown that using the Internet too often leads to a decrease in communication with family members living in the same household. For example, in 2016 in Romania, 43% of respondents believed that frequent use of social media negatively affects daily communication with family members (Kokorić Blažeka,

2020). Time spent online is often a source of conflict between parents and children, but also between siblings. Even though the Internet has made it easier to meet new friends and partners, these relationships are less stable and break at the first sign of conflict. This may be related to the phenomenon of "fear of missing out," which refers to the modern promotion of the constant search for something better, even new partners.

A number of authors theorize that people become indifferent to events in their real lives because they are so focused on virtual reality. Since the Internet is always available and does not pose a great risk, there is an opinion that we should use the term "networked individualism" rather than "virtual communities". Peračković and Petrinjak (2021, p. 59) write, "discussions about virtual communities necessarily lead us to an empirically more acceptable concept of networked sociability based on the aforementioned networked individuals, which better describes the considered topic because, while communication is prerequisite, it is an insufficient element to make some form of interaction that the community proclaimed in the classical meaning".

K. Robins (2001), on the other hand, believes that virtual communities are not a solution to the problems of the modern world, but a form of isolation from it. Virtual reality is neither a means to repair the state of our world nor a space for transparent communication. M. Spitzer (2018) also warns of the many negative effects of excessive use of social media. On the one hand, he emphasizes the negative impact of digital technologies on human health, highlighting in particular sleep problems or depression in young people due to too intensive use of the Internet. But this author also points out significant problems related to human social life, linking loneliness to Internet use (Spitzer, 2018, p. 253). Some previous studies have shown that time spent playing video games is negatively correlated with physical activity levels in young people, but this has not been demonstrated for other segments of Internet use (Shen and Williams, 2011). While many studies have addressed the negative effects of the excessive use of the Internet and digital technologies on human health, there are fewer studies that link overreliance on technology with attitudes towards the local community (Dodik Hundrić et al., 2018). However, some authors urge caution because Internet use is correlated with lower levels of community involvement, according to the oft-cited 2002 study by Kraut and others. In other words, Internet users were shown to be less knowledgeable about their local community and more likely to leave (Kraut, Kiesler, Boneva, Cummings, Helgeson, Crawford, 2002).

Considering the different, even conflicting, opinions of different authors dealing with virtual reality and the impact of digital technologies on sociality, it is necessary to explore the intersections between digital and physical reality and to define the ways in which technology affects the sense of belonging to the local community.

## **Objectives and Hypotheses**

The main objective of the study was to expand the existing knowledge about the relationship between social networking, the use of digital technologies, and the sense of community among young people. This has been shown to be an extremely complex topic, leading to discrepancies in the results of previous studies (Chew et al., 2011).

In our study, we posed the following hypotheses:

- H1: stronger social networking, as measured by social capital (number of friends and membership in voluntary groups) and satisfaction with relationships with friends, positively affects individual dimensions of sense of community;
- H2: frequency of technology use does not affect the sense of community; the assumption is that time spent using digital technologies does not necessarily disengage young people from the local community, but that the opposite is also possible – they may also maintain relationships with local community members;
- H3: the tendency to use technology to socialize has a negative effect on the sense of community; it is assumed that the changes in the way of sociality are related to the delocalization of social relationships.

## **Data Collection and Instruments**

This paper presents the results of a survey conducted among third and fourth grade high school students in Vukovar-Syrmia County. This county is in the far northeast of the Republic of Croatia and consists mainly of villages and some towns. In the 21st century, this area suffered from negative economic and demographic trends, which prompted more researchers to study young people and their perceptions of the quality of life here (Žanić, Miletić, Bendra, 2019). Our survey was conducted in November and December 2021 and questionnaires were administered in class settings. The research was made on a stratified probability sample to ensure a proportional representation of respondents in terms of their grade, educational program (grammar school or vocational school), and location of their school. A total of 552 students participated in the survey.

Hypotheses were tested using multiple linear regression analysis. In operationalizing the criterion variables, we considered that the sense of community is a multidimensional phenomenon. Therefore, we focused on three components in this analysis: support and social cohesion in the local community, emotional connection with peers in the local community, and satisfaction of young people's needs and opportunities for them to participate. In creating the measurement instrument, we measured perceptions of each dimension using the Sense of Community in Adolescents scale (Chiessi, Cicognani, Sonn, 2010). For each dimension, we used three items from the scale. Principal components analysis performed on the collected data using Varimax rotation and Kaiser-Guttman criterion confirmed the expected three-factor structure of the items used, with an explained variance of 77% and high saturation of items on all three factors (between 0.790 and 0.886). We used the sum of the scores of the corresponding items to measure these three dimensions of the sense of community. Three regression models were constructed to analyse separately the relationship between the predictor variables and measured dimensions of the sense of community.

To measure social networking, we used simple instruments by asking participants how many friends they had, how satisfied they were with their relationships, and whether they were

members of voluntary groups. Satisfaction with friends was measured on a scale of 1 – very dissatisfied to 5 – very satisfied, and membership in voluntary groups was measured on a three-point scale: 1 – I am not a member, 2 – I am a member of one, and 3 – I am a member of two or more groups. In contrast to these two questions, the question about the number of friends was open-ended, and we recoded the answers to a five-point scale as follows: score 1 means the answer was "I have no friends" or number zero; score 2 means "a few" or numbers 1 and 2; score 3 means "some" or numbers 3 and 4; score 4 means "plenty" or numbers 5 and 6; score 5 means "a lot" or numbers 7 and more.

The frequency of use of digital technologies was measured by questions on the frequency of use of specific devices or content as well as with question on self-perception of dependence on digital technologies. Respondents were asked to rate the frequency of Internet and mobile phone use and playing video games, while dependence on technology was measured using the "anxiety about being without technology" dimension borrowed from the Media and Technology Usage and Attitudes Scale (Rosen et al., 2013). Three items borrowed from the instrument showed the expected single-factor structure with 79% of explained variance, and in the further analysis, we used the sum of the scores for these three items to measure the dimension of self-perception of excessive digital technologies use.

We used two instruments to measure the tendency towards technologically-mediated socializing. The first instrument asked the subjects whether they preferred to communicate online or in person about important issues, using a five-point scale ranging from 1 – "I always choose face-to-face communication" to 5 – "I always choose online communication." The second instrument we called Online and Offline Sociality Comparison and it consisted of three items borrowed from the basic version of Stuart and Scott's (2021) Measure of Online Disinhibition instrument. To be more specific, we used only the items that explicitly addressed making new friends, sociality, and online communication. Three selected items have a one-factor structure with an explained variance of 74% and we used the sum of the scores of the three corresponding items to measure this dimension.

In addition to the main variables specified in the hypotheses, we analysed two other variables to isolate their effects on the relationship between predictor and criterion variables. The control variables were the gender of the subjects and the size of the place of residence.

## **Results**

Table 1 shows the results of the analysis of attitudes in relation to the three observed dimensions of sense of community. Comparing the averages in these three dimensions, that is, the arithmetic means of the ratings, we found that young people perceive elements related to support and emotional connection with peers more frequently than the elements related to support and emotional connection in the community, and that the elements related to satisfaction of needs and opportunities for participation are perceived least frequently. Regarding relationships with peers, 61% of young people often spend time with peers, and between 48% and 55% believe they have someone with whom to share experiences and interests, and that they can find someone to talk to where they live. Regarding statements about community cohesion, about 48% of respondents believe that their fellow citizens collaborate between themselves, while 39% and 45% believe that they are ready to help each

other and work together to solve local problems. As mentioned earlier, respondents are least satisfied with the opportunities for young people to get involved in the life of the local community. Only 33% of respondents believe there are enough entertainment opportunities, while between 39% and 44% believe there are activities and initiatives for young people to meet other young people where they live.

**Table 1: Attitudes towards statements describing three studied dimensions of the sense of place**

	Think about YOUR PLACE OF LIVING. Consider the following statements about opportunities in your place of living.	1. I strongly disagree	2. I disagree	3. I neither agree nor disagree	4. I agree	5. I strongly agree	M	SD
Support and emotional connection with peers	1. I spend a lot of time with other adolescents that live in this place.	9.6%	12.1%	17.8%	29.0%	31.5%	3.6	1.3
	2. If I feel like talking, I can generally find someone in my town to chat with.	10.0%	13.8%	21.1%	25.8%	29.4%	3.5	1.3
	3. In this place, I feel I can share experiences and interests with other young people.	11.8%	13.8%	26.2%	26.0%	22.0%	3.3	1.3
Satisfaction of needs and opportunities for involvement	7. In this place, there are enough opportunities to meet other boys and girls.	11.5%	18.6%	26.2%	27.0%	16.8%	3.2	1.2
	8. In this place, young people can find many opportunities to entertain themselves	16.6%	24.8%	26.0%	20.9%	11.7%	2.9	1.3
	9. In this place, there are many activities and initiatives in which young people like me can participate	11.8%	23.0%	26.6%	25.5%	13.1%	3.1	1.2
Support and emotional connection in the community	10. Many people in this town/community are willing to help each other.	7.8%	15.8%	31.3%	27.9%	17.1%	3.3	1.2
	11. People in my town/community collaborate.	6.4%	16.1%	29.7%	32.5%	15.3%	3.3	1.1
	12. People in my town/community work together to improve things.	9.1%	16.2%	35.8%	23.6%	15.3%	3.2	1.2

Source: primary data



Regarding social networking, the results of the analysis show that our participants are very social. Only 2% say they have no friends, about 15% have "a few" friends, i.e., one or two, 26% have "some" friends, i.e., three or four, 27% have "plenty" of friends, i.e., five or six, while most respondents, 31%, say they have "a lot" of friends, i.e., seven or more. For the most part, they are satisfied with their friends. To be precise, 84% of respondents said they are mostly or very satisfied with their friends, while only about 5% are mostly or very dissatisfied with their friends. On the other hand, the analysis showed that young people mostly do not participate in voluntary groups. Only 16% of the respondents are members of one voluntary group, while 6% are members of two or more voluntary groups.

The frequency of using digital technologies is high, as expected. Table 2 shows that 78% of respondents spend their time online often, while another 17% spend their time online sometimes; 76% text and make phone calls often, and 18% sometimes. Only about 5-6% of respondents said they rarely or never engage in the above activities. Playing video games is not as common: 34% of respondents play them often, 20% play them sometimes, and 46% play them rarely or never.

**Table 2: Frequency of use of digital technologies in the last year**

	1. Never	2. Rarely	3. Sometimes	4. Often	M	SD
I text and have mobile phone conversations.	1.1%	5.3%	17.9%	75.7%	3.7	0.6
I spend time online.	1.1%	4.0%	16.9%	78.0%	3.7	0.6
I play video games.	27.5%	18.1%	20.1%	34.2%	2.6	1.2

*Source: primary data*

Considering that digital technologies are widely available to young people and that they use them on a daily basis, not only for fun and information seeking, but also to satisfy various emotional and social needs, we wanted to know what the effects of overuse of these technologies are in the daily lives of young people. For that purpose, we measured self-perceptions of excessive use of digital technologies. The data presented in the table below show that approximately 28% of respondents are anxious when they do not have their mobile phone with them, 31% are anxious without Internet access, and 34% consider themselves dependent on technology.

**Table 3: Self-perception of excessive use of digital technologies**

To which degree do you agree with the following statements?	1. I strongly disagree	2. I disagree	3. I neither agree nor disagree	4. I agree	5. I strongly agree	M	SD
I get anxious when I don't have my mobile phone.	24.9%	25.5%	21.5%	14.0%	14.2%	2.7	1.4
I get anxious when I don't have Internet access.	22.0%	24.3%	23.0%	15.6%	15.1%	2.8	1.4
I am dependent on technology.	22.0%	20.8%	23.7%	17.5%	16.0%	2.8	1.4

*Source: primary data*

The importance of technologically-mediated socializing in young people's lives, or the role technology plays in facilitating the fulfilment of the need for social contact, was examined using questions about the tendency to socialize offline or online. The results in the next table show that when comparing the offline and online socialization of our respondents with others, the elements of traditional offline socialization predominate. However, the difference is not so large, and in some situations offline and online socialization are almost equally engaged. The polarization is most evident in the type of communication. In other words, half of the respondents believe that it is easier to communicate in person, and the other half believe that it is easier to maintain communication online, but to different degrees. Furthermore, 56% of respondents believe they have an easier time making friends in person, while 22% believe they are more successful online, and 22% are mostly or completely sure they make friends more easily online. Finally, 57% of respondents believe they are more social offline than online, while 23% believe they are at least somewhat more social online than offline, and 20% are mostly or quite sure they are more social online than offline.

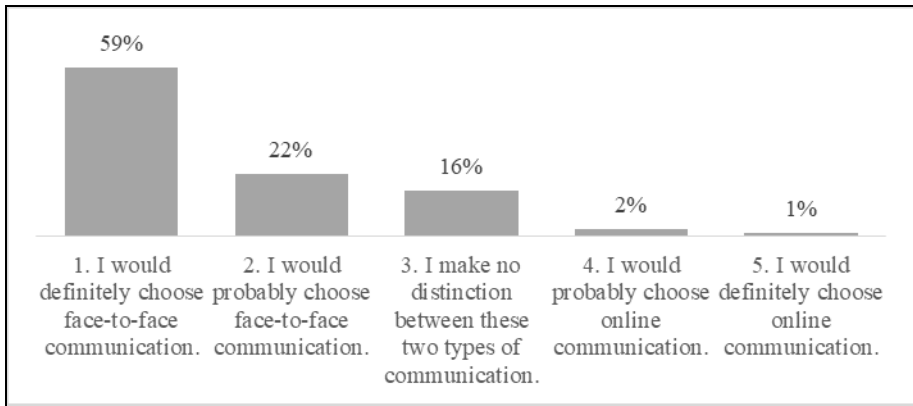
**Table 4: Online and offline socializing comparison**

To which degree do the following statements describe you, and how well do they describe your position?	1. Not at all	2. To a smaller degree	3. Mostly	4. Completely	M	SD
I am more outgoing online than I am offline.	57.4%	22.8%	11.9%	7.9%	1.7	1.0
I make friends more easily online than I do offline.	55.7%	21.9%	12.0%	10.4%	1.8	1.0
I find communicating with others easier on the Internet than in person.	50.4%	27.7%	14.1%	7.8%	1.8	1.0

*Source: primary data*

Most respondents still consider face-to-face contact to be very important, as confirmed by their responses to the question about their preferred form of communication when talking to friends about things that are important to them. The figure below shows that 81% of respondents would definitely or probably choose face-to-face communication to discuss important issues with their friends. In contrast, only 3% of respondents would probably or definitely choose online communication, while 16% would make no distinction between these types of communication.

Figure 1: Communication preferences when talking to friends about important issues



Source: primary data

The next step in our examination was a multiple regression analysis to determine the extent to which the selected variables help explain the demonstrated sense of place by three observed dimensions. We created a separate regression model for each of the selected dimensions and used the same predictor sets. Before analysing the regression models, we performed a correlation analysis of all variables included in the multiple regression analyses. The Pearson correlation coefficients in the figure below show that most of the predictor variables are not correlated with each other or their correlation is low ( $r < 0.36$ ). In three instances only, there was a moderate correlation ( $0.36 \leq r < 0.67$ ). A moderate positive correlation exists between the satisfaction with friends variable and the number of friends variable ( $r = 0.364$ ) as well as the communication preferences when talking with friends about important issues variable and the relationship between online and offline socializing ( $r = 0.392$ ), while the correlation of gender and frequency of playing online games ( $r = -0.509$ ) shows that boys prefer this type of entertainment. Correlation analysis revealed a low bivariate correlation ( $r < 0.36$ ) between the predictor and criterion variables, whereas a moderate correlation ( $0.36 \leq r < 0.67$ ) was found between criterion variables.

**Table 5: Pearson correlation coefficient between variables used in the analysis**

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
<b>1. Satisfaction of needs and opportunities for involvement</b>	1												
<b>2. Support and emotional connection in the community</b>	.460	1											
<b>3. Support and emotional connection with peers</b>	.436	.421	1										
<b>4. Gender</b>	-.238	-.128	-.090	1									
<b>5. Settlement size</b>	.138	-.185	.039	-.082	1								
<b>6. Number of friends</b>	.214	.238	.307	-.300	-.039	1							
<b>7. Satisfaction with friends</b>	.269	.253	.314	-.059	-.007	.364	1						
<b>8. Membership in voluntary groups</b>	.001	.000	.079	-.001	-.070	-.002	-.010	1					
<b>9. I text and have mobile phone conversations</b>	.006	.041	.207	.150	.036	.092	.129	-.006	1				
<b>10. I spend time online</b>	-.029	-.084	.070	.040	.101	.077	.058	-.053	.516	1			
<b>11. I play video games</b>	.170	.002	.051	-.509	.110	.175	.086	-.045	.036	.237	1		
<b>12. Self-perception of the excessive use of digital technologies</b>	-.084	-.107	-.026	.138	.063	-.025	-.048	-.024	.213	.266	.056	1	
<b>13. Offline and online socializing comparison</b>	-.074	-.095	-.275	-.057	.031	-.150	-.145	-.124	-.021	.104	.221	.154	1
<b>14. Communication preferences when talking to friends about important topics</b>	-.136	-.046	-.204	-.101	.016	-.079	-.059	-.068	-.060	.067	.188	.090	.392

*Source: primary data*

The results of the multiple regression analysis in Table 6 show that the predictor set analysed in the first model explained 16% of the variance in the satisfaction of needs and opportunities for involvement dimension. In addition to gender and size of the place of living, other variables such as the number of friends, satisfaction with friends, and communication preferences when talking about important issues had a statistically significant effect on the observed dimension. In the created model, in which all predictors were controlled, it was found that girls and respondents from smaller places had lower scores for the dimension of need satisfaction and opportunities to participate, while respondents with a larger number of friends, who are satisfied with their friends and tend to talk in person about important issues, had higher scores. In the second model, where the criterion variable was the dimension of support and emotional connection in the community, only 13% of the variance was explained and there were the fewest significant predictors. In this model, only the size of the place of living and satisfaction with friends variables had a significant statistical effect. Here, respondents living in larger towns or cities had lower values for the criterion variable, while a positive correlation was found between the criterion variable and the variables number of friends and satisfaction with friends. In the third model, the set of used

predictors explained 23% of the variance in the support and emotional connection with peers criterion variable. The number and satisfaction with friends variables had a statistically significant positive effect on the criterion variable, while one of the variables from the set measuring frequency of use of digital technologies had the same effect for the first time. More specifically, this analysis showed that respondents who used their mobile phones more frequently for texting and talking more often also had higher scores on this criterion variable. On the other hand, a statistically significant negative effect was found on the dimension of support and emotional connection with peers in the model for the relationship between offline and online socializing as well as for the variable communication preferences when talking about important issues, with respondents who were more inclined to technologically-mediated socializing also showing lower scores for this dimension.

**Table 6: Results of the regression analysis predicting changes in the analysed dimensions of sense of place**

		Satisfaction of needs and opportunities for involvement	Support and emotional connection in the community	Support and emotional connection with peers
		B	B	B
Gender		-.127**	-.095	-.044
Settlement size		-.150**	-.162**	.049
Social networking	Number of friends	.106*	.165**	-.203**
	Satisfaction with friends	.189**	.176**	.176**
	Membership in voluntary groups	.018	-.027	.070
Frequency of using digital technologies	I text and have mobile phone conversations	-.005	.074	.184**
	I spend time online	-.034	-.086	-.019
	I play video games.	.103	-.043	.031
	Self-perception of excessive use of digital technologies	-.051	-.075	-.014
Technologically-mediated socializing	Online and offline socializing comparison	.026	.004	-.132**
	Communication preferences when talking to friends about important issues	-.178**	-.044	-.155**
Adjusted R <sup>2</sup>		0.155	0.126	0.232
F		9.024**	7.138**	14.324**

\*p < 0.05; \*\*p < 0.01

Source: primary data

## Discussion

Several important findings of our analysis can be highlighted. First, the control variables of gender and size of the place of living had a significant effect on the results. In larger places of residence, respondents' satisfaction with the opportunities to fulfil their needs in the community is higher, but their perception of social cohesion is lower. We can assume that in larger places the quality of infrastructure is also better, as well as the quality of activities in which young people can participate, but at the same time there is less enthusiasm for cooperation and supporting each other. For example, the results of a survey in Vukovar, the second largest city in the county after Vinkovci, showed that young people often say that in their opinion neighbours are not as close as they were when their parents were young (Žanić, Bendra, Milanković, 2022a). It has also been shown that girls believe they have fewer opportunities to be involved in community life. These findings can also be related to the results of previous studies in the same county, according to which girls showed weaker attachment to their place of living and a stronger tendency to move away (Žanić, Miletić, Živić, 2022b).

In terms of predictor variables, we can say that the hypothesis that stronger social networks are associated with a stronger sense of local community was confirmed. Nevertheless, the expected relationship was found for the number of friends and satisfaction with friends, but not for membership in voluntary groups. These results can be related to some insights from earlier research in the Republic of Croatia, which did not show the expected positive effect of participation in civil society work on various aspects of sociality (Šalaj, 2011). We also partly confirmed the hypothesis that more frequent use of digital technologies does not affect the sense of community. More precisely, more frequent use of mobile phones has only been shown to correlate positively with the dimension of support and emotional connection with peers. The rest of our results indicated that young people rely a lot on digital technologies in their daily lives, however the frequency of their use cannot be related to the sense of community. Nonetheless, it is very important to say that the tendency towards technologically-mediated socializing actually has a negative effect on the sense of community. In this way, the idea of the multiple and seemingly contradictory effects of the Internet and digital technologies on local social relations has been re-emphasized. Previous studies attempted to explain this phenomenon using the concepts of dual mechanisms and dual processes (Chew et al., 2011). We believe that the results of this study contribute to the body of knowledge and insights about how the use of digital technologies for communication within a locality strengthens local cohesion, while their use for maintaining relationships outside the locality diminishes the importance of the local community. This work foregrounded attitudes towards meaning and preferred forms of socializing. Results of our study showed that frequent use of digital technologies does not in itself have a negative effect on sense of community, but when technologically-mediated socializing is preferred, the local environment becomes less important. This means that disengagement from the local community occurs when online socializing becomes more important than face-to-face interaction.

However, it is important to note that the dimensions of sense of community in the analysed model differ greatly in terms of the effect size and that the interpretation offered works best for the dimension of support and emotional connection with peers

dimension. This means that the use of digital technologies mainly influences the evaluation of the relationship with peers, while it is much less relevant for the other two analysed dimensions. In other words, neither the frequency of technology use nor technologically-mediated socializing have a serious effect on the dimension measuring perceptions of community cohesion.

Therefore, we believe that future studies should examine other dimensions of sense of community, such as community attachment. In addition, it would be worthwhile to examine the extent to which the unique characteristics of this region, consisting mostly of villages and several towns, influenced the results or whether the results would be different if the study had been conducted in larger cities.

## **Conclusions**

Changes in the modern world often lead to the belief that people are becoming less connected to their neighbours, place of living, and their local community. While on the one hand, we can interpret this as a result of the spread of social connections over larger areas, others believe that this is a sign of the isolation and alienation of modern people who spend more and more time with digital technologies, neglecting the social relationships in their community. In this context, it was important to determine whether digital technology really negatively affects the sense of community. The results of our analysis show that the more frequent use of digital technologies does not have a negative effect on the sense of community locally. It is interesting to note that even extensive reliance on technology did not negatively affect young people's attitudes towards their community. Thus, we can assume that young people rely on digital technologies early in their social lives, that they are a part of their everyday lives, and that the sole use of technology does not lead to delocalization. However, even though young people spend most of their free time using digital technologies and are likely to find it difficult to imagine life before their spread, there are differences among them when it comes to their preferences for building and maintaining social relationships face-to-face or online. These differences have been shown to play an important role in evaluating the sense of the local community. Thus, technology itself is not necessarily changing local relationships, but these relationships are changing as young people begin to prefer technologically-mediated socializing.

It is critical to track trends in youth's sociability, to observe whether technological developments negatively affect face-to-face sociality in the long term, increasing the number of people who prefer socializing online. According to the study's findings, these trends would lead to a significant delocalization of young people in the long term.

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## References

- Alexander, J., Thompson, K., Desfor Edles, L., Capous-Desyllas, M. (2020). *Suvremeni uvod u sociologiju*. Belgrade: Ekonomski fakultet.
- Cabitzza, F., Scramaglia, R., Cornetta, D., Simone, C. (2016). When the web supports communities of place: the 'Social Street' case in Italy. *International Journal of Web Based Communities*, 12(3), 216-237.
- Capece, G., Costa, R. (2013). The new neighbourhood in the internet era: network communities serving local communities. *Behaviour & Information Technology*, 25(3), 438-448.
- Casalegno, F. (2000). *Community dynamics and the BEV senior citizens group*. In *Community networks: lessons from Blacksburg*. Cohill, A. and Kavanaugh, A. (Eds.), pp. 99-121. Virginia, Norwood, MA: Artech House.
- Castells, M. (2001). *The Internet Galaxy: Reflections on the Internet*. Oxford: Oxford University Press.
- Chayko, M. (2016). *Superconnected. The Internet, Digital Media and Techno-Social Life*. London: SAGE Publications.
- Chew, H. E., LaRose, R., Steinfield, C., Velasquez, A. (2011). The Use of Online Social Networking by rural youth and its effects on Community Attachment. *Information, Communication & Society*, 14(5), 726-747. <http://dx.doi.org/10.1080/1369118X.2010.539243>
- Chiessi, M., Cicognani, E., Sonn, C. (2010). Assessing Sense of Community on adolescents: validating the brief scale of Sense of Community in adolescents (SOC-A). *Journal of Community Psychology*, 38, 276-292. <https://doi.org/10.1002/jcop.20364>
- Dearden, A., Walker, S. (2003). Designing for civil society. *Proceedings of HCI 2003: Designing for Society*, 2, 157-158.
- Dodig Hundrić, D., Ricijaš, N., Vlček, M. (2018). Mladi i ovisnost o internetu – pregled suvremenih spoznaja. *Hrvatska revija za rehabilitacijska istraživanja*, 54(1), 123-137. <https://doi.org/10.31299/hrri.54.1.9>
- De Meulenaere, J., Courtois, C., Ponnet, K. (2021). Disentangling social support mobilization via online neighborhood networks. *Community Psychology*, (49), 481-498. DOI: 10.1002/jcop.22474
- Hampton, K.N., Wellman, B. (2000). *Examining Community in the Digital Neighborhood: Early Results from Canada's Wired Suburb*. In: Ishida, T., Isbister, K. (Eds.): *Digital Cities. Digital Cities 1999. Lecture Notes in Computer Science*, vol. 1765. Berlin: Springer, Heidelberg. [https://doi.org/10.1007/3-540-46422-0\\_16](https://doi.org/10.1007/3-540-46422-0_16)
- Jandrić, A. (2005). Lokalna zajednica u prevenciji poremećaja u ponašanju: koncept pozitivnog razvoja mladih. *Hrvatska revija za rehabilitacijska istraživanja*, 41(2), 3-18.
- Jones, S. G. (2002). *The Internet and its Social Landscape*. In: S. Jones (Ed.), *Virtual Culture. Identity and Communication in Cybersociety*. London: SAGE Publication.



- Kavanaugh, A., Patterson, S. (2001). The impact of community computer networking on community involvement and social capital. *American Behavioral Scientist*, 45(3), 496–509. (doi:10.1177/00027640121957312)
- Kavanaugh, A., Carroll, J. M., Rosson, M. B., Zin, T. T., Reese, D. D. (2005). Community networks: Where offline communities meet online. *Journal of Computer-Mediated Communication*, 10(4), JCMC10417.
- Kokorić Blažeka, S. (2020). Utjecaj novih informacijsko-komunikacijskih tehnologija na obiteljski život. *Medijske studije*, 11(22), 81-101.
- Kraut, R., Kiesler, S., Boneva, B., Cummings, J., Helgeson, V., Crawford, A. (2002). Internet paradox revisited. *Journal of Social Issues*, 58(1), 49–75.
- Lin, H. F. (2007). The role of online and offline features in sustaining virtual communities: an empirical study. *Internet Research*, 17(2), 119-138. <https://doi.org/10.1108/10662240710736997>
- Peračković, K., Petrinjak, H. (2021). Virtual Sociability – between virtual communities and networked individualism. *Disputatio Philosophica*, 23(1), 43-63.
- Rheingold, H. (1993). *The Virtual Community: Homesteading on the Electronic Frontier*. Reading, MA: Addison-Wesley.
- Robins, K. (2001). *Kiberprostor i svijet u kojem živimo*. In: M. Featherstone and R. Burrows (eds). *Kiberprostor, kibertijela, cyberpunk*. Zagreb: Naklada Jesenski i Turk.
- Rosen L.D., Whaling K., Carrier L.M., Cheever N.A., Rökkum J. (2013). The Media and Technology Usage and Attitudes Scale: An empirical investigation. *Computers in Human Behaviours*, 29(6), 2501-2511. doi: 10.1016/j.chb.2013.06.006.
- Shen, C., Williams, D. (2011). Unpacking time online: Connecting internet and massively multiplayer online game use with psychosocial well-being. *Communication Research*, 38(1), 123-149.
- Spitzer, M. (2018). *Digitalna demencija. Kako mi i naša djeca silazimo s uma*. Zagreb: Lijevak.
- Stewart, K., Townley, G. (2020). How Far Have we Come? An Integrative Review of Current Literature on Sense of Community and Well-being. *American Journal of Community Psychology*, 66(1-2), 166-189.
- Šalaj, B. (2011). Civilno društvo i demokracija: što bi Tocqueville i Putnam vidjeli u Hrvatskoj? *Analiza Hrvatskog politološkog društva*, 8(1), 49-71.
- Žanić, M., Bendra, I., Milanković, I. (2022). Budi odgovoran, ostani doma! Značenje doma za mlade Vukovarce u vremenu pandemije COVID-19. *Sociologija i prostor*, 60(2 (224)), 319-340. <https://doi.org/10.5673/sip.60.2.5>
- Žanić, M., Miletić, G.-M., Bendra, I. (2019). Kvaliteta života mladih iz Vukovarsko-srijemske županije u uvjetima suvremene demografske krize. *Socijalna ekologija*, 28 (3), 187-210.
- Žanić, M., Miletić, G.-M. (2022). From new sense of homeplace to disengaged attachment. Place attachment and territorial belongings in the Republic of Croatia. *Geoadria*, 27(1), 53-77. <https://doi.org/10.15291/geoadria.3543>
- Žanić, M., Miletić, G.M., Živić, D. (2022). Odrednice privrženosti mjestu: primjer mladih iz Vukovarsko-srijemske županije. *Društvena istraživanja*, 31 (2), 257-280. <https://doi.org/10.5559/di.31.2.04>