Czech University of Life Sciences Prague

Faculty of Economics and Management

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Bachelor Thesis

Statistical analysis of digital social communication in the Czech Republic

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Faculty of Economics and Management

BACHELOR THESIS ASSIGNMENT

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Informatics

Thesis title

Statistical analysis of digital social communication in the Czech Republic

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Objectives of thesis

The objective of this thesis is to investigate the relationship between levels of education and digital social communication in the Czech Republic, using data from the European Social Survey 2020 (ESS2020), and to identify any significant differences in usage patterns among individuals with varying levels of education. By analyzing data from the ESS2020, we aim to gain insights into how digital social communication is being used in the Czech Republic, and whether there are any notable differences in usage patterns among individuals with varying levels of education. Our analysis will be based on descriptive and inferential statistics, which will allow us to identify any significant differences in usage patterns and to explore the factors that may be driving these differences.
In addition to our statistical analysis, we will also conduct a literature search to provide context for our findings and to explore the broader implications of our research. By combining our statistical analysis with a review of existing research, we hope to contribute to a deeper understanding of the role that digital social communication plays in modern life, and to inform future research and policy initiatives in this area.

Methodology

The analysis will utilize data from the European Social Survey 2020 (ESS2020), a cross-national survey aimed at understanding the attitudes and behaviors of individuals across Europe on a range of issues, including social and political participation, social networks, and social inequality.

To identify differences in the level of digital social communication between different socio-demographic groups of the population, the study will employ descriptive and inferential statistics. The research questions and hypotheses will be discussed in the context of existing literature to provide a comprehensive understanding of the topic.

The proposed extent of the thesis

40-50 pages without annexes

Keywords

digital social communication; Czech Republic; statistical analysis; social networks; inequality

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Recommended information sources

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Declaration

I declare that I have worked on my bachelor thesis titled "Statistical analysis of digital social communication in the Czech Republic" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break any copyrights.

In Prague on 15.03.2024.

Mayu Fukuhara

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Statistical analysis of digital social communication in the Czech Republic

Abstract

This study investigates the landscape of digital social communication in the Czech Republic, focusing on the influence of generational cohorts and education levels. Utilizing data from the European Social Survey 2020 (ESS2020), statistical analysis reveals significant insights into digital communication behaviors within this context. Findings highlight disparities across generational cohorts, with younger generations demonstrating higher levels of digital engagement than Baby Boomers. Moreover, education levels significantly influence digital communication behaviors, with higher-educated individuals exhibiting more excellent proficiency and engagement. The study employs rigorous statistical methods to comprehensively explore these dynamics, including the chi-square test, descriptive statistics, and inferential statistics. This research contributes to understanding digital communication trends and informs strategies for enhancing digital literacy and inclusive communication practices.

Keywords: Digital social communication, Czech Republic, generational cohorts, education levels, European Social Survey 2020, statistical analysis, chi-square test, digital engagement, digital literacy, inclusive communication

Statistická analýza digitální sociální komunikace v České republice

Abstrakt

Tato studie zkoumá prostředí digitální sociální komunikace v České republice se zaměřením na vliv generačních kohort a úrovně vzdělání. S využitím dat z Evropského sociálního výzkumu 2020 (ESS2020) odhaluje statistická analýza významné poznatky o chování v oblasti digitální komunikace v tomto kontextu. Zjištění poukazují na rozdíly mezi generačními kohortami, přičemž mladší generace vykazují vyšší úroveň digitální angažovanosti než Baby Boomers. Úroveň vzdělání navíc významně ovlivňuje chování v oblasti digitální komunikace, přičemž osoby s vyšším vzděláním vykazují vynikající znalosti a větší zapojení. Studie využívá přísné statistické metody ke komplexnímu prozkoumání této dynamiky, včetně testu chí-kvadrát, popisné statistiky a inferenční statistiky. Tento výzkum přispívá k pochopení trendů v oblasti digitální komunikace a poskytuje informace pro strategie zvyšování digitální gramotnosti a inkluzivních komunikačních postupů.

Klíčová slova: Digitální sociální komunikace, Česká republika, generační kohorty, úroveň vzdělání, European Social Survey 2020, statistická analýza, chí-kvadrát test, digitální zapojení, digitální gramotnost, inkluzivní komunikace

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1. Introduction

Digital social communication has become an integral part of modern life and is growing rapidly as its means include text, voice, and live communication. Various devices are now in use, allowing individuals to operate in their preferred manner and communicate personally and professionally worldwide.

Unexpectedly, the COVID-19 pandemic has further accelerated digital communication, with many relying on these tools as their primary means of staying connected with friends, family, and colleagues across borders.

As a foreign university student studying abroad in the Czech Republic, I was intrigued by the unique context of digital communication in this country. The Czech Republic, with its rich history, vibrant culture, and traditional industry, offers a distinct perspective on the role of digital communication in society. Moreover, the country's relatively high internet penetration and usage level make it an intriguing case study for examining variations in digital social communication among different population groups and at an educational level.

The primary goal of this bachelor thesis is to employ statistical analysis to investigate variations in the utilization of digital social communication tools within the Czech Republic, operating data derived from the European Social Survey 2020 (ESS2020).

Analyzing data from the ESS2020 aims to gain insights into how digital social communication is being used in the Czech Republic and whether there are any notable differences in usage patterns among individuals with varying levels of education across different generational cohorts.

This analysis aims to identify significant differences in digital social communication usage patterns in the Czech Republic based on descriptive and inferential statistics. In addition to the statistical analysis, we conduct a literature review to provide context for our findings and explore the broader implications of our research. By combining our statistical analysis with a review of existing research, we aim to contribute to a deeper understanding of the role of digital social communication in our increasingly complex modern lives. This understanding can inform future research and policy efforts, improve digital literacy, and promote inclusive communication practices.

1.1. Objectives

Objective 1 (Generation and Digital Communication):
The primary objective of this thesis, concerning Hypotheses 1 to 4, is to investigate the impact of generational cohorts on digital social communication in the Czech Republic, utilizing data from the European Social Survey 2020 (ESS2020). This objective interests exploring the differences in the frequency of digital communication among generations and the specific means by which they communicate. Through an in-depth analysis, this research aims to uncover variations in the usage patterns of digital communication tools, such as text messaging, email, social media, video calls, and phone calls, among individuals from different generational cohorts, including Baby Boomers, Generation X, Millennials, and Generation Z.

Objective 2 (Education and Digital Communication):
The central objective related to Hypotheses 5-8 is to assess the influence of education level on digital social communication in the Czech Republic. For this purpose, we utilize data from the European Social Survey 2020 (ESS2020) to investigate differences in the frequency and mode of digital communication between individuals with different educational backgrounds in the Czech Republic. This study comprehensively analyzes digital communication tools such as text messaging, email, social media, video calls, and telephone calls. This analysis aims to identify disparities in the digital communication practices of individuals with diverse educational outcomes.

1.2. Methodology

This section outlines the methodology employed in this thesis to explore the impact of generational cohorts on digital communication patterns (Hypotheses 1 - 4) and to investigate the relationship between levels of education and digital social communication (Hypotheses 5 - 8) in the Czech Republic using data from the European Social Survey 2020 (ESS2020).

1.2.1. Data Source

The primary data source for this study is the European Social Survey 2020 (ESS2020). The ESS provides a comprehensive dataset with valuable information on various social behavior and communication aspects, making it suitable for addressing research questions.

1.2.2. Method of Data Analysis

2.2.2.1. Hypothesis Testing

The chi-square test was employed to analyze hypotheses, specifically regarding the relationships between education levels, generational cohorts, and digital communication patterns. This statistical method is suitable for examining the association and measures of association between two categorical variables, making it appropriate for our ordinal variables related to education levels and generational cohorts. The chi-square test enables the assessment of significant differences in the frequency distributions of digital communication behaviors across different socio-demographic groups.

2.2.2.2. Overview of statistical method

This section provides an overview of the statistical methods utilized to analyze data obtained from the European Social Survey 2020 (ESS2020) to investigate digital communication patterns within the Czech Republic.

Quantitative Analysis:
The research primarily employed quantitative analysis techniques to explore the relationships between variables and test hypotheses. Given that the variables under investigation were ordinal, the chi-square test was selected as the primary statistical tool for analyzing the associations between education levels, generational cohorts, and digital communication patterns.

Descriptive Statistics:
Descriptive statistics, including means, standard deviations, and frequency distributions, were utilized to summarize and present essential characteristics of the dataset. That provided a clear overview of the central tendencies and variations within the data.

Inferential Statistics:
Inferential statistics, particularly the chi-square test, were employed to test hypotheses and identify statistically significant differences in the level of digital social communication between different socio-demographic groups. The chi-square test assessed associations between categorical variables and provided insights into the prevalence of digital communication behaviors across various demographic categories.

Statistical Software:
Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS), an industry-standard statistical software. SPSS facilitated data manipulation, hypothesis testing, and the generation of graphical representations to illustrate findings effectively.

2. Literature Review

2.1. Definition of Digital Social Communication

2.1.1. Overview of Digital Social Communication

In this study, digital social communication refers to using online technologies, mainly social media platforms, to facilitate social interactions and connectedness. It encompasses how individuals engage with others through digital means, such as text messages, email, video calls, and interactions on social media platforms. This definition is the foundation for analyzing and understanding the patterns and differences in digital social communication in the Czech Republic.

Research has shown that digital social communication has become a significant aspect of modern life, particularly for different age groups. In the study by Hope, Schwaba, and Piper (2014), titled "Understanding Digital and Material Social Communications for Older Adults," the authors examined how older adults engage in digital and material social communications. They highlighted the importance of digital platforms in maintaining social connections for older individuals.

Lefebvre and Bornkessel's research in "Digital Social Networks and Health" (2013) explores the role of digital social networks in influencing health outcomes. Their study delves into the impact of social media and online networks on health information-seeking, patient behavior, and healthcare practices. The paper underscores the growing significance of digital social networks in health communication and outcomes.

2.1.2. Online Technologies and Social Media Platforms

In today's digital landscape, online technologies and social media platforms significantly influence modern communication. This section offers an overview of these technologies, emphasizing their importance in digital social interaction.

Nowadays, various digital communication means are emerging every day, and digital social communication includes multiple online tools. Social media platforms such as Facebook, Twitter, Instagram, and LinkedIn transcend geographic boundaries and enable content sharing and interaction (Kaplan & Haenlein, 2010). Messaging apps like WhatsApp, Messenger, and Slack are essential for one-on-one and group communication. Email remains a fundamental tool for digital communication. Relatively new videoconferencing platforms such as Zoom and Skype are rapidly gaining popularity, especially in remote work and education settings (Bélanger & Watson-Manheim, 2006). Online forums and communities allow like-minded people to discuss and share knowledge (Ridings & Gefen, 2004).

The multifaceted impact of these technologies on social interactions can be predicted by anyone exposed to global issues in the news. While they offer convenience and

connectivity, they also come with challenges. The speed and ease of digital communication can reshape the tempo of interactions and enable rapid exchanges, but at the expense of depth and reflection (Turkle, 2015). On the other hand, online platforms have expanded the scope of social connections, allowing individuals to interact with people from different backgrounds and locations. It has also become easier to create virtual communities around shared interests and identities (Ellison et al., 2007).

2.2. Social Communication Differences across Levels of Education

2.2.1. Influence of Education-Related Demographics on Social Communication Patterns

Although Hargittai's paper (2007) primarily focuses on student demographics and the use of various social network sites (SNSs), factors such as parental education, among others, indirectly influence social communication patterns in digital spaces. Provides valuable insight into how it can impact. This study reveals that different demographic groups exhibit different preferences for SNS and reveals how education-related factors shape online interactions.

Hargittai's (2007) research, while primarily focused on student demographics and social network site (SNS) usage, reveals significant insights into how education-related factors shape online interactions, as supported by Figures 1 and 2. Notably, students with parents of varying educational backgrounds tend to prefer different SNS platforms, as shown in Figure 1. Those with highly educated parents favor Facebook and Xanga, while students with less-educated parents are more inclined towards MySpace.

Table 1: Descriptive statistics for the sample demographics (%)

	Full sample	SNS users	Facebook users	MySpace users	Xanga users	Friendster users
Women	55.8	56.9	56.3	60.4	56.9	60.0
Age						
18	64.8	65.3	66.1	65.9	61.5	68.6
19	32.2	31.6	31.5	30.4	36.9	28.6
20–29	3.0	3.1	2.4	3.6	1.5	2.8
Race and Ethnicity						
White, non-Hispanic	42.7	43.2	44.9	44.0	20.6	3.0
Hispanic	18.8	18.4	14.5	25.2	9.5	3.0
African American, non-Hispanic	7.7	7.4	7.9	8.2	3.2	0
Asian American, non-Hispanic	29.6	29.9	31.6	21.3	65.1	93.9
Native American, non-Hispanic	1.2	1.1	1.1	1.3	1.6	0
Parent's Highest Level of Education						
Less than high school	7.4	7.4	6.0	10.0	1.5	0
High school	19.0	18.3	17.6	20.1	16.9	8.6
Some college	20.1	19.5	18.8	20.9	20.0	11.4
College	34.4	35.5	37.4	34.9	33.9	57.1
Graduate degree	19.1	19.2	20.1	14.1	27.7	22.9
Lives with parents	53.1	51.4	48.2	54.5	49.2	58.8

Source: Eszter Hargittai, 2007

Table 2: Percentage of different groups of people who use any SNS and specific social network sites+

	Any SNS	Facebook	MySpace	Xanga	Friendster
Gender					
Male	85*	78	49***	6	3
Female	89*	80	59***	6	4
Race & ethnicity					
White, Non-Hispanic	89	83**	57	3***	0***
Hispanic	86	60***	73***	3*	1*
African American, NH	84	80	58	0	0*
Asian American, NH	88	84**	39***	13***	10***
Native American, NH	83	75	58	8	0
Parental education					
Less than high school	88	64***	73***	1*	0*
High school	83*	73*	57	6	2
Some college	85	74*	57	6	2
College	90*	86***	55	6	6
Graduate degree	88	83	41***	9*	4

Notes: + Use is defined as "use sometimes" or "use often." *$p < .1$, **$p < .01$, ***$p < .001$

Source: Eszter Hargittai, 2007

Additionally, Hargittai's study emphasizes the role of context and experience in SNS usage. Living arrangements and time spent online influence engagement with these platforms. While not explicitly addressing the impact of education on communication patterns, this research underscores that education-related demographics indirectly affect digital communication choices.

2.2.2. Studies on Social Interaction in Educational Settings

Numerous studies have been conducted in educational settings to gain deeper insights into the relationship between education and digital social communication (Ajay, 2016). These studies explore how educational institutions, including schools and universities, leverage digital communication tools for teaching, collaboration, and administrative purposes (Pokrovskaia, N.N., 2021).

As highlighted by 'The Digital Revolution and Adolescent Brain Evolution' by Jay N. Giedd (2012), education is no longer confined to traditional classroom settings; instead, it has become an arena where digital social communication evolves in tandem with rapid technological advancements. Adopting online learning platforms, virtual classrooms, and digital collaboration tools has transformed how educators and students interact. These technologies have opened new channels for student-teacher communication, peer-to-peer collaboration, and access to educational resources (Giedd, 2012).

Furthermore, examining these studies allows us to identify how digital social communication is integrated into educational curricula and how educators adapt their teaching methods to the digital age. For instance, in the paper 'CALL in a Social Context:

Reflecting on Digital Equity, identity, and Interaction in the post-COVID Age' (Smith, 2021), the authors delve into the sociocultural aspects of computer-assisted language learning (CALL) and how the digital learning environment impacts learner equity, identity, and interaction. This study sheds light on the complex sociocultural factors that influence digital language education, challenging the notion that online learning automatically levels hierarchical participation structures.

In the following sections, we will continue to explore the role of generational differences and the specific landscape of digital social communication in the Czech Republic, building a comprehensive foundation for our statistical analysis.

2.3. Link between Social Communication and Generation

2.3.1. Understanding Generational Communication Preferences

Generational differences shape digital social communication (Selwyn, 2009). Each generation, from Baby Boomers to Generation Z, exhibits unique communication preferences within the digital domain, rooted in their historical, cultural, and technological contexts. For example, Baby Boomers, influenced by the advent of television and traditional print media, often favor email over modern social media platforms. In contrast, Millennials, raised during the internet boom, seamlessly integrate instant messaging and social networking into their daily lives. These nuances have implications not only for online interactions but also for educational settings. This section delves into generational communication preferences, highlighting their significance in digital social communication in the Czech Republic.

2.3.2. Studies on Communication Styles of Different Generations

Understanding how generations engage in digital communication is vital for comprehending contemporary social interactions. Subramaniam and Razak's 2014 study investigated Generation Y and Baby Boomers' communication styles, highlighting key differences.

Generation Y, known for their tech-savviness, often uses informal and abbreviated language online, like "b4" for "before," reflecting their typing efficiency (Subramaniam & Razak, 2014, p5). They also pepper their conversations with interjections like 'la' and 'haha,' fostering an informal tone.

In contrast, Baby Boomers tend to adopt a more formal tone. Capitalization is infrequent in their messages, with only 11 posts containing capitalized words. They also use punctuation sparingly.

Generation Y distinguishes itself with expressive emoticons like :), =P, and ♥, enriching their Facebook posts and fostering an informal style [Thurlow & McKay, 2003] cited by (Subramaniam & Razak, 2014).

These examples highlight the stark differences in communication styles between Generation Y and Baby Boomers in the digital realm, crucial for understanding online interactions across generations.

2.4. Digital Social Communication in the Czech Republic

2.4.1. Overview of Digital Landscape in the Czech Republic

According to the government's policy document 'Digital Czech Republic v. 2.0 - The Way to the Digital Economy,' adopted in 2013 (El. Communications Dep., 2014), the Czech Republic has been actively advancing its digital landscape. This policy is built on three fundamental pillars: the development of high-quality digital infrastructure, the expansion of digital services, and the enhancement of digital literacy. Notably, one of its key objectives is to ensure universal high-speed internet access, aiming for transmission speeds of 30 Mbit/s for the entire population and 100 Mbit/s for at least half of all Czech citizens by 2020, aligning with the Digital Agenda of the EU. The policy also emphasizes removing barriers to the growth of the digital economy and promoting lifelong learning with an emphasis on digital literacy. These goals are pursued through 17 actions outlined in the policy and require a coordinated effort among various government agencies and stakeholders, including the Ministry of Industry and Trade and the Czech Communications Authority. The policy emphasizes the importance of extensive cooperation and engagement by experts in order to make the most of the potential of the digital economy in the Czech Republic.

2.4.2. Internet Penetration and Usage Statistics

Understanding internet penetration and its correlation with individual values is pivotal in comprehending digital communication trends in developed and developing countries (Bagchi et al., 2015). This study, "Internet Use and Human Values: Analyses of Developing and Developed Countries," takes a unique approach by utilizing Schwartz's value framework to investigate the influence of individual values on internet usage patterns (Bagchi et al., 2015).

The research delves into two distinct studies. The first study encompasses a broad spectrum of developing and developed nations, employing data from the World Values Survey. It reveals that many Schwartz-like human value types demonstrate substantial relevance to internet use across these nations. Furthermore, it unveils that specific value types such as conformity, tradition, security, and power significantly impact internet use in developed countries. In contrast, achievement, stimulation, self-direction, tradition, and

security are relevant in at least two or more developing nations, with tradition and security emerging as the most influential value types in both groups (Bagchi et al., 2015).

The findings of this study emphasize the significance of individual values in influencing internet usage patterns across various nations (Bagchi et al., 2015). They highlight the nuanced interplay between human values and digital technology adoption. As the internet continues to be a transformative force globally, understanding how values influence its use becomes increasingly crucial. This research provides valuable insights that can inform strategies for enhancing effective internet utilization, bridging the digital divide, and promoting digital inclusion.

2.5. Existing Research Gaps and Limitations

In order to understand the digital social communication landscape in the Czech Republic, it is essential to acknowledge the existing research gaps and recognize the limitations of prior studies. While the field of digital communication is continuously evolving, several areas still need to be explored or warrant further investigation.

2.5.1. Gaps in the Understanding of Digital Social Communication

Despite the increasing prevalence of digital social communication tools and platforms, there are notable gaps in our comprehension of how these technologies are employed within the unique socio-cultural context of the Czech Republic.

1. Socio-cultural Nuances: Limited research delves into the sociocultural complexities that may influence digital communication behaviors in the Czech Republic. This gap leaves room to investigate how historical, linguistic, and cultural factors shape individual preferences and practices in the digital realm.

2. Intersectionality with Demographics: Understanding how digital communication patterns intersect with other demographic factors beyond education and generation, such as occupation or geographical location, requires further exploration. This comprehensive approach can unveil more nuanced usage patterns.

3. Longitudinal Studies: Longitudinal studies tracking the evolution of digital communication habits over time can provide valuable insights into the dynamic nature of this phenomenon. Such studies can shed light on the impact of significant events, like the COVID-19 pandemic, on digital communication trends.

4. Qualitative Understanding: While quantitative analysis provides valuable statistical insights, qualitative research is needed to uncover the underlying motivations, emotions, preferences, and experiences of individuals who engage in digital social communication. Is required. By combining both approaches, a holistic understanding can be obtained.

2.5.2. Limitations of Previous Studies in the Czech Republic

Previous studies conducted within the digital communication environment of the Czech Republic have resulted in significant contributions. However, they also have certain limitations.

1. Sample Representativeness: Some studies may suffer from limitations related to sample representativeness. Ensuring that study samples accurately reflect the Czech Republic's diverse demographic composition is crucial for drawing robust conclusions.

2. Data Collection Methods: Some studies' reliance on self-reporting and survey-based data collection methods may introduce response biases. Exploring alternative data collection techniques, such as passive data collection from digital platforms, can mitigate this limitation.

3. Temporal Relevance: The rapid evolution of digital technologies requires studies to maintain temporal relevance. Research conducted using outdated data may not accurately reflect current communication trends.

4. Limited Cross-Disciplinary Exploration: Digital social communication is a multifaceted field that benefits from cross-disciplinary perspectives. Encouraging collaboration between researchers from diverse fields, such as sociology, psychology, and technology studies, can enhance the depth of analysis.

Acknowledging these gaps and limitations lays the groundwork for the present study's contribution to the field. Through a rigorous methodology and interdisciplinary approach, this research aims to address these gaps and provide valuable insights into digital social communication in the Czech Republic.

2.6. Methodological Approaches in Studying Digital Social Communication

This section outlines the methodological strategies employed in investigating digital social communication within the unique context of the Czech Republic, utilizing data from THE EUROPEAN SOCIAL SURVEY (ESS). These methodological approaches have been tailored to align with this study's research objectives and practical constraints.

2.6.1. Quantitative Research Methods for Analyzing Social Communication

Structured survey data from ESS will be analyzed rigorously to gain quantitative insights into how education level influences digital social communication in the Czech Republic. This method asks respondents carefully designed questions about their digital

communication habits. Statistical techniques will then be applied to identify the data's patterns, trends, and potential correlations. Through quantitative methods, this study seeks to offer a systematic and statistically robust comprehension of the connections between education levels and digital communication practices.

2.6.2. Qualitative Approaches for Understanding Digital Interaction

Complementing the quantitative analysis, qualitative approaches will be incorporated to delve deeper into digital communication's 'why' and 'how' aspects. Qualitative research methods will involve in-depth interviews and content analysis of digital interactions. These methods will help uncover individuals' underlying motivations, preferences, and experiences in their digital communication practices. By combining quantitative and qualitative methodologies, this research offers a comprehensive and nuanced perspective on digital social communication among different education groups in the Czech Republic.

2.6.3. Consideration of Socio-demographic Control Variables

Recognizing the multifaceted nature of digital communication, this study will consider socio-demographic control variables beyond education level. Factors such as age, gender, and geographical location will be considered during the analysis. This approach ensures that observed effects can be attributed to education level with greater confidence, as it controls for other potential influencing factors. By adopting this comprehensive methodology, this research aims to provide a holistic understanding of the role of education in shaping digital social communication behaviors in the Czech Republic.

3. Practical Part

3.1. Data description

The dataset utilized for this study is the European Social Survey 2020 (ESS2020), renowned for its comprehensive coverage of socio-demographic and communication-related variables. Selected for its relevance to the research objectives, ESS2020 offers a rich array of data essential for analysis.

3.1.1. Variables Overview

• netusoft (Internet Use Frequency) - This variable measures the frequency of internet use on different devices.

Table 3: SPSS Statistics output of the frequency table for variable: netusoft

Internet use, how often

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	137	5.5	5.5	5.5
	Only occasionally	186	7.5	7.5	13.1
	A few times a week	270	10.9	10.9	24.0
	Most days	319	12.9	12.9	36.9
	Every day	1559	63.0	63.1	100.0
	Total	2471	99.8	100.0	
Missing	Refusal	1	.0		
	Don't know	4	.2		
	Total	5	.2		
Total		2476	100.0		

Source: author

Table 4: SPSS Statistics output of the descriptive statistics for variable: netusoft

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Internet use, how often	2471	1	5	4.20	1.224
Valid N (listwise)	2471				

Source: author

• Age_Groups (Generational Age Groups based on Year of Birth) -This variable categorizes respondents into specific age groups based on their year of birth (definitions provided in Chapter 4.1.4).

Table 5: SPSS Statistics output of the frequency table for variable: Age_Groups

Generational Age Groups based on Year of Birth

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Baby Boomers	731	29.5	31.3	31.3
	Gen X	742	30.0	31.8	63.1
	Gen Y	561	22.7	24.0	87.2
	Gen Z	299	12.1	12.8	100.0
	Total	2333	94.2	100.0	
Missing	System	143	5.8		
Total		2476	100.0		

Source: author

Table 6: SPSS Statistics output of the descriptive statistics for variable: Age_Groups

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Generational Age Groups based on Year of Birth	2333	1.00	4.00	2.1835	1.01648
Valid N (listwise)	2333				

Source: author

• compnt2 (Communicate with parent via text, email, or messaging apps, how often2) - Measures the frequency of communication with parents through digital means.

Table 7: SPSS Statistics output of the frequency table for variable: compnt2

Communicate with parent via text, email or messaging apps, how often2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	At least a day	114	4.6	8.5	8.5
	Several times a week	319	12.9	23.9	32.4
	Several times a month	311	12.6	23.3	55.7
	Once a month	92	3.7	6.9	62.6
	Less often	227	9.2	17.0	79.6
	Never	272	11.0	20.4	100.0
	Total	1335	53.9	100.0	
Missing	System	1141	46.1		
Total		2476	100.0		

Source: author

Table 8: SPSS Statistics output of the descriptive statistics for variable: compnt2

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Communicate with parent via text, email or messaging apps, how often2	1335	1.00	6.00	3.6105	1.67114
Valid N (listwise)	1335				

Source: author

- scrnpnt2 (Speak with parent and see each other on a screen, how often2) - Measures the frequency of video call communication with parents.

Table 9: SPSS Statistics output of the frequency table for variable: scrnpnt2

Speak with parent and see each other on a screen, how often 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	At least once a day	98	4.0	7.2	7.2
	Several times a week	88	3.6	6.5	13.7
	Several times a month	53	2.1	3.9	17.6
	Once a month	206	8.3	15.2	32.8
	Less often	911	36.8	67.2	100.0
	Total	1356	54.8	100.0	
Missing	System	1120	45.2		
Total		2476	100.0		

Source: author

Table 10: SPSS Statistics output of the descriptive statistics for variable: scrnpnt2

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Speak with parent and see each other on a screen, how often 2	1356	1.00	5.00	4.2861	1.24105
Valid N (listwise)	1356				

Source: author

- phonepnt2 (Speak with parent using a phone, how often2) - Measures the frequency of communication with parents via telephone.

Table 11: SPSS Statistics output of the frequency table for variable: phonepnt2

Speak with parent using a phone, how often2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	At least a day	284	11.5	21.1	21.1
	Several times a week	484	19.5	36.0	57.1
	Several month a month	313	12.6	23.3	80.4
	Once a month	62	2.5	4.6	85.0
	Less onften	105	4.2	7.8	92.8
	Never	97	3.9	7.2	100.0
	Total	1345	54.3	100.0	
Missing	System	1131	45.7		
Total		2476	100.0		

Source: author

Table 12: SPSS Statistics output of the descriptive statistics for variable: phonepnt2

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Speak with parent using a phone, how often2	1345	1.00	6.00	2.6364	1.44266
Valid N (listwise)	1345				

Source: author

- Education_Category (Categorization of respondents based on their highest level of education) - Indicates the highest level of education attained by respondents in Czechia (definitions provided in Chapter 4.1.4).

Table 13: SPSS Statistics output of the frequency table for variable:Education_Category

Categorization of respondents based on their highest level of education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary Education	190	7.7	7.7	7.7
	Secondary Education	803	32.4	32.5	40.2
	Secondary Education with Certification	947	38.2	38.4	78.6
	D.S or B,C	195	7.9	7.9	86.5
	Second Level of the Univerisity Degree	334	13.5	13.5	100.0
	Total	2469	99.7	100.0	
Missing	System	7	.3		
Total		2476	100.0		

Source: author

Table 14: SPSS Statistics output of the descriptive statistics for variable:Education_Category

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Categorization of respondents based on their highest level of education	2469	1.00	5.00	2.8704	1.11213
Valid N (listwise)	2469				

Source: author

This overview provides a snapshot of the variables under investigation and their significance to our study.

3.1.2. Missing Values

A critical aspect of our data examination included an assessment of missing values. While the ESS2020 dataset was relatively well-prepared and missing values were explicitly marked, it was imperative to address any discrepancies. Leveraging SPSS, we meticulously processed missing values to ensure the robustness of our findings.

Specifically, within variables such as "compnt" (Communicate with parent via text, email, or messaging apps, how often), "scrnpnt" (Speak with parent and see each other on a screen, how often), and "phonepnt" (Speak with parent using a phone, how often), we identified and recoded non-responses, including "Not applicable," "Refusal," "Don't know," and "No answer," as system-missing values (coded as 66, 77, 88, and 99, respectively).

Moreover, for variables "yrbrn" (Year of birth), which was transformed into "Age_Group" (Generational Age Groups based on Year of Birth), and "edlvdcz" (Highest level of education, Czechia), transformed into "Education_Category" (Categorization of respondents based on their highest level of education), we adopted a similar approach. Non-responses were systematically re-coded as system-missing values, encompassing "Refusal," "Don't know," and "No answer," and assigned codes of 7777, 8888, and 9999, respectively. This standardized treatment of missing data bolstered the reliability and consistency of our analysis, ensuring meticulous handling of missing values throughout our statistical procedures.

3.1.3. Value Labels

To ensure clarity and consistency, value labels for all variables were meticulously defined. Precise categorization, exemplified by "compnt2," "scrnpnt2," "phonepnt2," "Age_Group," "netusoft," and "Education_Category," enhances the interpretability of research outcomes, fostering robust analysis and reproducibility.

3.1.4. Data Transformation

The ESS dataset was meticulously structured, requiring minimal data transformations for our analysis. However, we implemented several strategic transformations to deepen our understanding and align with our research objectives. Notably, we recoded the "yrbrn" variable (Year of birth) into distinct generational cohorts, drawing insights from the seminal work of Twenge, J.M., Campbell, S.M., Hoffman, B.J., & Lance, C.E. (2010) in their exploration of "Generational Differences in Work Values: Leisure and Extrinsic Values Increasing, Social and Intrinsic Values Decreasing" published in the Journal of Management.

The categorization into "Baby Boomers," "Gen X," "Gen Y (Millennials)," and "Gen Z" was delineated based on the following birth ranges: Baby Boomers (1946-1964), Gen X (1965-1980), Gen Y (1981-1996), and Gen Z (1997-2012). This transformation facilitated a nuanced examination of digital communication patterns across different generational cohorts, thereby enriching our analysis of socio-demographic factors.

Additionally, similar transformations were applied to the "compnt" variable (Communicate with parent via text, email, or messaging apps, how often), the "scrnpnt" variable (Speak with parent and see each other on a screen, how often), the "phonepnt"

variable (Speak with parent using a phone, how often), and the "edlvdcz" variable (Highest level of education, Czechia), creating new variables labeled "compnt2," "scrnpnt2," "phonepnt2," and "Education_Category" respectively. This recoding included six distinct categories for "compnt2," "scrnpnt2," and "phonepnt2," as outlined previously.

For compnt2, scrnpnt2 and phonepnt2

- value1: At least once a day
- value2: Several times a week
- value3: Several times a month
- value4: Once a month
- value5: Less often
- value6: Never

For "Education_Category," the recoding was as follows:

- Primary Education: Combining original values 1 (Nedokončené základní vzdělání, neukončený 1. stupeň školní docházky) and 2 (Nedokoncené základní vzdelání, 5 nebo více let skolní docházky, dokoncen pouze 1. stupen ZS, SZS, ZZS, obecná s).

- Secondary Education: Combining original values 3 (Základní vzdělání, měšťanská škola) and 4 (Střední vzdělání s výučním listem, Střední vzdělání bez maturity).

- Secondary Education with Certification: Combining original values 5 (Středoškolské vzdělání bez maturity) and 6 (Vyučení s maturitou, Úplné střední odborné vzdělání s maturitou) and 7 (Strední vzdelání s maturitou následované studiem s maturitou).

- D.S. or Bc.: Combining original values 8 (Střední všeobecné vzdělání s maturitou) and 9 (Pomaturitní vzdělání s diplomem: Vyšší odborná škola, 5. a 6. ročník konzervatoře).

- Second Level of the University Degree: Combining original values 10 (Vysokoškolské bakalářské vzdělání) and 11 (Vysokoškolské magisterské vzdělání, Vědecká výchova, postgraduální vzdělání).

- Missing Value System: Original values 7777 to 9999 were recoded as system-missing.

By including the original names of the values, readers can better understand the transformation process and its rationale.

3.1.5. Outliers and Extreme Values

After conducting an initial check using box plots, no apparent outliers or extreme values were observed in our dataset. However, it is essential to remain vigilant for such observations during subsequent statistical analyses.

The ESS2020 dataset provides a suitable foundation for our study, offering well-defined variables and minimal missing values. These features allow us to conduct meaningful research into digital social communication in our selected European country.

3.2. Hypothesis testing

Hypothesis 1: There is a difference in internet usage frequency based on the generation (age group).

Variables: netusoft (Internet use, how often), Age_Groups (Generational Age Groups based on Year of Birth).

Table 15: SPSS Statistics output of the Cross tabulation

Generational Age Groups based on Year of Birth * Internet use, how often Crosstabulation

			Internet use, how often					
			Never	Only occasionally	A few times a week	Most days	Every day	Total
Generational Age Groups based on Year of Birth	Baby Boomers	Count	77	96	133	118	306	730
		Expected Count	27.3	51.1	77.1	96.0	478.5	730.0
		% within Generational Age Groups based on Year of Birth	10.5%	13.2%	18.2%	16.2%	41.9%	100.0%
		Adjusted Residual	11.7	7.9	8.1	2.9	-16.2	
	Gen X	Count	7	40	69	118	506	740
		Expected Count	27.7	51.8	78.2	97.3	485.1	740.0
		% within Generational Age Groups based on Year of Birth	0.9%	5.4%	9.3%	15.9%	68.4%	100.0%
		Adjusted Residual	-4.8	-2.1	-1.3	2.7	2.0	
	Gen Y	Count	2	19	34	59	447	561
		Expected Count	21.0	39.3	59.3	73.7	367.7	561.0
		% within Generational Age Groups based on Year of Birth	0.4%	3.4%	6.1%	10.5%	79.7%	100.0%
		Adjusted Residual	-4.8	-3.9	-4.0	-2.1	8.1	
	Gen Z	Count	1	8	10	11	267	297
		Expected Count	11.1	20.8	31.4	39.0	194.7	297.0
		% within Generational Age Groups based on Year of Birth	0.3%	2.7%	3.4%	3.7%	89.9%	100.0%
		Adjusted Residual	-3.3	-3.1	-4.3	-5.2	9.5	
Total		Count	87	163	246	306	1526	2328
		Expected Count	87.0	163.0	246.0	306.0	1526.0	2328.0
		% within Generational Age Groups based on Year of Birth	3.7%	7.0%	10.6%	13.1%	65.5%	100.0%

Source: author

Table 16: SPSS Statistics output of Chi-square test

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	399.341[a]	12	<.001
Likelihood Ratio	403.281	12	<.001
Linear-by-Linear Association	302.895	1	<.001
N of Valid Cases	2328		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.10.

Source: author

Table 17: SPSS Statistics output of Directional Measures

Directional Measures

			Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Somers' d	Symmetric	.328	.016	19.758	<.001
		Generational Age Groups based on Year of Birth Dependent	.386	.018	19.758	<.001
		Internet use, how often Dependent	.285	.014	19.758	<.001

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: author

Table 18: SPSS Statistics output of Symmetric Measures

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Nominal by Nominal	Phi	.414			<.001
	Cramer's V	.239			<.001
	Contingency Coefficient	.383			<.001
Ordinal by Ordinal	Kendall's tau-b	.332	.016	19.758	<.001
	Kendall's tau-c	.276	.014	19.758	<.001
	Gamma	.531	.024	19.758	<.001
N of Valid Cases		2328			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: author

Hypothesis 2: There is a difference in how often individuals communicate with their parents through digital means based on their generation.

Variables: compnt2 (Communicate with parent via text, email, or messaging apps, how often2), Age_Groups (Generational Age Groups based on Year of Birth).

Table 19: SPSS Statistics output of Cross tabulation

Generational Age Groups based on Year of Birth * Communicate with parent via text, email or messaging apps, how often2 Crosstabulation

			Communicate with parent via text, email or messaging apps, how often2						
			At least a day	Several times a week	Several times a month	Once a month	Less often	Never	Total
Generational Age Groups based on Year of Birth	Baby Boomers	Count	4	11	11	5	19	58	108
		Expected Count	9.2	25.8	25.2	7.4	18.3	22.0	108.0
		% within Generational Age Groups based on Year of Birth	3.7%	10.2%	10.2%	4.6%	17.6%	53.7%	100.0%
	Gen X	Count	20	95	93	30	80	143	461
		Expected Count	39.4	110.2	107.5	31.8	78.1	94.0	461.0
		% within Generational Age Groups based on Year of Birth	4.3%	20.6%	20.2%	6.5%	17.4%	31.0%	100.0%
	Gen Y	Count	47	135	133	38	89	53	495
		Expected Count	42.3	118.4	115.4	34.1	83.9	100.9	495.0
		% within Generational Age Groups based on Year of Birth	9.5%	27.3%	26.9%	7.7%	18.0%	10.7%	100.0%
	Gen Z	Count	43	78	74	19	38	18	270
		Expected Count	23.1	64.6	62.9	18.6	45.7	55.1	270.0
		% within Generational Age Groups based on Year of Birth	15.9%	28.9%	27.4%	7.0%	14.1%	6.7%	100.0%
Total		Count	114	319	311	92	226	272	1334
		Expected Count	114.0	319.0	311.0	92.0	226.0	272.0	1334.0
		% within Generational Age Groups based on Year of Birth	8.5%	23.9%	23.3%	6.9%	16.9%	20.4%	100.0%

Source: author

Table 20: SPSS Statistics output of Chi-square tests

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	195.630[a]	15	<.001
Likelihood Ratio	191.181	15	<.001
Linear-by-Linear Association	144.239	1	<.001
N of Valid Cases	1334		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.45.

Source: author

Table 21: SPSS Statistics output of Directional Measures

Directional Measures

			Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Somers' d	Symmetric	-.269	.021	-12.395	<.001
		Generational Age Groups based on Year of Birth Dependent	-.250	.020	-12.395	<.001
		Communicate with parent via text, email or messaging apps, how often2 Dependent	-.290	.023	-12.395	<.001

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: author

Table 22: SPSS Statistics output of Symmetric Measures

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	-.269	.022	-12.395	<.001
	Kendall's tau-c	-.269	.022	-12.395	<.001
	Gamma	-.356	.028	-12.395	<.001
N of Valid Cases		1334			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: author

Hypothesis 3: There is a difference in how often individuals see and communicate with their parents via video calls based on their generation.

Variables: scrnpnt2 (Speak with parent and see each other on a screen, how often2), Age Group(Generational Age Groups based on Year of Birth).

Table 23: SPSS Statistics output of Cross tabulation

Generational Age Groups based on Year of Birth * Speak with parent and see each other on a screen, how often 2 Crosstabulation

			Speak with parent and see each other on a screen, how often 2					
			At least once a day	Several times a week	Several times a month	Once a month	Less often	Total
Generational Age Groups based on Year of Birth	Baby Boomers	Count	4	5	2	11	86	108
		Expected Count	7.8	7.0	4.2	16.4	72.5	108.0
		% within Generational Age Groups based on Year of Birth	3.7%	4.6%	1.9%	10.2%	79.6%	100.0%
	Gen X	Count	34	18	17	40	359	468
		Expected Count	33.8	30.4	18.3	71.1	314.3	468.0
		% within Generational Age Groups based on Year of Birth	7.3%	3.8%	3.6%	8.5%	76.7%	100.0%
	Gen Y	Count	43	47	27	86	298	501
		Expected Count	36.2	32.5	19.6	76.2	336.5	501.0
		% within Generational Age Groups based on Year of Birth	8.6%	9.4%	5.4%	17.2%	59.5%	100.0%
	Gen Z	Count	17	18	7	69	167	278
		Expected Count	20.1	18.1	10.9	42.3	186.7	278.0
		% within Generational Age Groups based on Year of Birth	6.1%	6.5%	2.5%	24.8%	60.1%	100.0%
Total		Count	98	88	53	206	910	1355
		Expected Count	98.0	88.0	53.0	206.0	910.0	1355.0
		% within Generational Age Groups based on Year of Birth	7.2%	6.5%	3.9%	15.2%	67.2%	100.0%

Source: author

Table 24: SPSS Statistics output of Chi-square tests

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	70.048[a]	12	<.001
Likelihood Ratio	70.625	12	<.001
Linear-by-Linear Association	11.877	1	<.001
N of Valid Cases	1355		

a. 1 cells (5.0%) have expected count less than 5. The minimum expected count is 4.22.

Source: author

Table 25: SPSS Statistics output of Directional Measures

Directional Measures

			Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Somers' d	Symmetric	-.127	.022	-5.684	<.001
		Generational Age Groups based on Year of Birth Dependent	-.149	.026	-5.684	<.001
		Speak with parent and see each other on a screen, how often 2 Dependent	-.111	.019	-5.684	<.001

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: author

Table 26: SPSS Statistics output of Symmetric Measures

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	-.129	.023	-5.684	<.001
	Kendall's tau-c	-.103	.018	-5.684	<.001
	Gamma	-.214	.037	-5.684	<.001
N of Valid Cases		1355			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: author

Hypothesis 4: There is a difference in how often individuals communicate with their parents using a phone based on their generation.

Variables: phonepnt2 (Speak with parent using a phone, how often), Age_Groups (Generational Age Groups based on Year of Birth).

Table 27: SPSS Statistics output of Cross tabulation

Generational Age Groups based on Year of Birth * Speak with parent using a phone, how often2 Crosstabulation

			Speak with parent using a phone, how often2						
			At least a day	Several times a week	Several month a month	Once a month	Less onften	Never	Total
Generational Age Groups based on Year of Birth	Baby Boomers	Count	25	29	26	8	6	15	109
		Expected Count	23.0	39.2	25.4	5.0	8.5	7.9	109.0
		% within Generational Age Groups based on Year of Birth	22.9%	26.6%	23.9%	7.3%	5.5%	13.8%	100.0%
	Gen X	Count	103	167	92	22	44	38	466
		Expected Count	98.5	167.5	108.5	21.5	36.4	33.6	466.0
		% within Generational Age Groups based on Year of Birth	22.1%	35.8%	19.7%	4.7%	9.4%	8.2%	100.0%
	Gen Y	Count	89	186	129	25	39	30	498
		Expected Count	105.2	179.0	116.0	23.0	38.9	35.9	498.0
		% within Generational Age Groups based on Year of Birth	17.9%	37.3%	25.9%	5.0%	7.8%	6.0%	100.0%
	Gen Z	Count	67	101	66	7	16	14	271
		Expected Count	57.3	97.4	63.1	12.5	21.2	19.6	271.0
		% within Generational Age Groups based on Year of Birth	24.7%	37.3%	24.4%	2.6%	5.9%	5.2%	100.0%
Total		Count	284	483	313	62	105	97	1344
		Expected Count	284.0	483.0	313.0	62.0	105.0	97.0	1344.0
		% within Generational Age Groups based on Year of Birth	21.1%	35.9%	23.3%	4.6%	7.8%	7.2%	100.0%

Source: author

Table 28: SPSS Statistics output of Chi-square tests

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	29.269[a]	15	.015
Likelihood Ratio	28.789	15	.017
Linear-by-Linear Association	7.399	1	.007
N of Valid Cases	1344		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.03.

Source: author

Table 29: SPSS Statistics output of Directional Measures

Directional Measures

			Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Somers' d	Symmetric	-.043	.023	-1.812	.070
		Generational Age Groups based on Year of Birth Dependent	-.041	.022	-1.812	.070
		Speak with parent using a phone, how often2 Dependent	-.044	.025	-1.812	.070

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: author

Table 30: SPSS Statistics output of Symmetric Measures

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	-.043	.023	-1.812	.070
	Kendall's tau-c	-.041	.023	-1.812	.070
	Gamma	-.058	.032	-1.812	.070
N of Valid Cases		1344			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: author

Hypothesis 5: There is a difference in internet usage frequency based on education level.

Variables: netusoft (Internet use, how often), Education_Category(Categorization of respondents based on their highest level of education).

Table 31: SPSS Statistics output of Cross tabulation

Categorization of respondents based on their highest level of education * Internet use, how often Crosstabulation

			Internet use, how often					
			Never	Only occasionally	A few times a week	Most days	Every day	Total
Categorization of respondents based on their highest level of education	Primary Education	Count	18	8	12	18	133	189
		Expected Count	10.4	14.0	20.7	24.5	119.4	189.0
		% within Categorization of respondents based on their highest level of education	9.5%	4.2%	6.3%	9.5%	70.4%	100.0%
	Secondary Education	Count	86	90	109	111	406	802
		Expected Count	44.3	59.2	87.9	103.8	506.8	802.0
		% within Categorization of respondents based on their highest level of education	10.7%	11.2%	13.6%	13.8%	50.6%	100.0%
	Secondary Education with Certification	Count	13	63	117	132	620	945
		Expected Count	52.2	69.8	103.6	122.3	597.1	945.0
		% within Categorization of respondents based on their highest level of education	1.4%	6.7%	12.4%	14.0%	65.6%	100.0%
	D.S or B,C	Count	4	8	13	23	146	194
		Expected Count	10.7	14.3	21.3	25.1	122.6	194.0
		% within Categorization of respondents based on their highest level of education	2.1%	4.1%	6.7%	11.9%	75.3%	100.0%
	Second Level of the Univerisity Degree	Count	15	13	19	35	252	334
		Expected Count	18.4	24.7	36.6	43.2	211.1	334.0
		% within Categorization of respondents based on their highest level of education	4.5%	3.9%	5.7%	10.5%	75.4%	100.0%
Total		Count	136	182	270	319	1557	2464
		Expected Count	136.0	182.0	270.0	319.0	1557.0	2464.0
		% within Categorization of respondents based on their highest level of education	5.5%	7.4%	11.0%	12.9%	63.2%	100.0%

Source: author

Table 32: SPSS Statistics output of Chi-square tests

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	168.322[a]	16	<.001
Likelihood Ratio	176.415	16	<.001
Linear-by-Linear Association	62.894	1	<.001
N of Valid Cases	2464		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.43.

Source: author

Table 33: SPSS Statistics output of Directional Measures

Directional Measures

			Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Somers' d	Symmetric	.145	.017	8.501	<.001
		Categorization of respondents based on their highest level of education Dependent	.165	.019	8.501	<.001
		Internet use, how often Dependent	.129	.015	8.501	<.001

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: author

Table 34: SPSS Statistics output of Symmetric Measures

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	.146	.017	8.501	<.001
	Kendall's tau-c	.116	.014	8.501	<.001
	Gamma	.232	.027	8.501	<.001
N of Valid Cases		2464			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: author

Hypothesis 6: There is a difference in how often individuals communicate with their parents through digital means based on their education level.

Variables: compnt2 (Communicate with parent via text, email, or messaging apps, how often2), Education_Category(Categorization of respondents based on their highest level of education).

Table 35: SPSS Statistics output of Cross tabulation

Categorization of respondents based on their highest level of education * Communicate with parent via text, email or messaging apps, how often2 Crosstabulation

			Communicate with parent via text, email or messaging apps, how often2						
			At least a day	Several times a week	Several times a month	Once a month	Less often	Never	Total
Categorization of respondents based on their highest level of education	Primary Education	Count	22	29	29	9	21	16	126
		Expected Count	10.8	30.2	29.4	8.7	21.4	25.6	126.0
		% within Categorization of respondents based on their highest level of education	17.5%	23.0%	23.0%	7.1%	16.7%	12.7%	100.0%
	Secondary Education	Count	20	54	64	33	66	95	332
		Expected Count	28.4	79.5	77.5	22.9	56.3	67.5	332.0
		% within Categorization of respondents based on their highest level of education	6.0%	16.3%	19.3%	9.9%	19.9%	28.6%	100.0%
	Secondary Education with Certification	Count	41	137	145	29	80	93	525
		Expected Count	44.9	125.6	122.5	36.2	89.0	106.7	525.0
		% within Categorization of respondents based on their highest level of education	7.8%	26.1%	27.6%	5.5%	15.2%	17.7%	100.0%
	D.S or B,C	Count	20	55	25	9	21	19	149
		Expected Count	12.7	35.7	34.8	10.3	25.3	30.3	149.0
		% within Categorization of respondents based on their highest level of education	13.4%	36.9%	16.8%	6.0%	14.1%	12.8%	100.0%
	Second Level of the Univerisity Degree	Count	11	44	48	12	38	48	201
		Expected Count	17.2	48.1	46.9	13.9	34.1	40.9	201.0
		% within Categorization of respondents based on their highest level of education	5.5%	21.9%	23.9%	6.0%	18.9%	23.9%	100.0%
Total		Count	114	319	311	92	226	271	1333
		Expected Count	114.0	319.0	311.0	92.0	226.0	271.0	1333.0
		% within Categorization of respondents based on their highest level of education	8.6%	23.9%	23.3%	6.9%	17.0%	20.3%	100.0%

Source: author

Table 36: SPSS Statistics output of Chi-square tests

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	82.302[a]	20	<.001
Likelihood Ratio	78.828	20	<.001
Linear-by-Linear Association	.370	1	.543
N of Valid Cases	1333		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.70.

Source: author

Table 37: SPSS Statistics output of Directional Measures

Directional Measures

			Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Somers' d	Symmetric	-.038	.023	-1.687	.092
		Categorization of respondents based on their highest level of education Dependent	-.037	.022	-1.687	.092
		Communicate with parent via text, email or messaging apps, how often2 Dependent	-.040	.024	-1.687	.092

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: author

Table 38: SPSS Statistics output of Symmetric Measures

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	-.038	.023	-1.687	.092
	Kendall's tau-c	-.037	.022	-1.687	.092
	Gamma	-.049	.029	-1.687	.092
N of Valid Cases		1333			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: author

Hypothesis 7: There is a difference in how often individuals see and communicate with their parents via video calls based on their education level.

Variables: scrnpnt2 (Speak with parent and see each other on a screen, how often2), Education_Category(Categorization of respondents based on their highest level of education).

Table 39: SPSS Statistics output of Cross tabulation

Categorization of respondents based on their highest level of education * Speak with parent and see each other on a screen, how often 2 Crosstabulation

			Speak with parent and see each other on a screen, how often 2					
			At least once a day	Several times a week	Several times a month	Once a month	Less often	Total
Categorization of respondents based on their highest level of education	Primary Education	Count	8	2	5	39	73	127
		Expected Count	9.2	8.3	5.0	19.3	85.3	127.0
		% within Categorization of respondents based on their highest level of education	6.3%	1.6%	3.9%	30.7%	57.5%	100.0%
	Secondary Education	Count	21	14	10	34	260	339
		Expected Count	24.5	22.0	13.3	51.6	227.6	339.0
		% within Categorization of respondents based on their highest level of education	6.2%	4.1%	2.9%	10.0%	76.7%	100.0%
	Secondary Education with Certification	Count	46	41	22	71	357	537
		Expected Count	38.9	34.9	21.0	81.7	360.5	537.0
		% within Categorization of respondents based on their highest level of education	8.6%	7.6%	4.1%	13.2%	66.5%	100.0%
	D.S or B,C	Count	10	16	7	33	83	149
		Expected Count	10.8	9.7	5.8	22.7	100.0	149.0
		% within Categorization of respondents based on their highest level of education	6.7%	10.7%	4.7%	22.1%	55.7%	100.0%
	Second Level of the Univerisity Degree	Count	13	15	9	29	136	202
		Expected Count	14.6	13.1	7.9	30.7	135.6	202.0
		% within Categorization of respondents based on their highest level of education	6.4%	7.4%	4.5%	14.4%	67.3%	100.0%
Total		Count	98	88	53	206	909	1354
		Expected Count	98.0	88.0	53.0	206.0	909.0	1354.0
		% within Categorization of respondents based on their highest level of education	7.2%	6.5%	3.9%	15.2%	67.1%	100.0%

Source: author

Table 40: SPSS Statistics output of Chi-square tests

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	58.117[a]	16	<.001
Likelihood Ratio	55.685	16	<.001
Linear-by-Linear Association	3.427	1	.064
N of Valid Cases	1354		

a. 1 cells (4.0%) have expected count less than 5. The minimum expected count is 4.97.

Source: author

Table 41: SPSS Statistics output of Directional Measures

Directional Measures

			Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Somers' d	Symmetric	-.047	.022	-2.073	.038
		Categorization of respondents based on their highest level of education Dependent	-.057	.027	-2.073	.038
		Speak with parent and see each other on a screen, how often 2 Dependent	-.040	.019	-2.073	.038

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: author

Table 42: SPSS Statistics output of Symmetric Measures

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	-.047	.023	-2.073	.038
	Kendall's tau-c	-.037	.018	-2.073	.038
	Gamma	-.076	.037	-2.073	.038
N of Valid Cases		1354			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: author

Hypothesis 8: There is a difference in how often individuals communicate with their parents using a phone based on their education level.

Variables: phonepnt2 (Speak with parent using a phone, how often2), Education_Category(Categorization of respondents based on their highest level of education).

Table 43: SPSS Statistics output of Cross tabulation

Categorization of respondents based on their highest level of education * Speak with parent using a phone, how often2 Crosstabulation

			Speak with parent using a phone, how often2						
			At least a day	Several times a week	Several month a month	Once a month	Less onften	Never	Total
Categorization of respondents based on their highest level of education	Primary Education	Count	40	37	23	7	8	9	124
		Expected Count	26.2	44.7	28.9	5.7	9.7	8.8	124.0
		% within Categorization of respondents based on their highest level of education	32.3%	29.8%	18.5%	5.6%	6.5%	7.3%	100.0%
	Secondary Education	Count	68	104	75	19	34	36	336
		Expected Count	71.1	121.1	78.3	15.5	26.3	23.8	336.0
		% within Categorization of respondents based on their highest level of education	20.2%	31.0%	22.3%	5.7%	10.1%	10.7%	100.0%
	Secondary Education with Certification	Count	105	202	134	25	34	33	533
		Expected Count	112.7	192.1	124.2	24.6	41.7	37.7	533.0
		% within Categorization of respondents based on their highest level of education	19.7%	37.9%	25.1%	4.7%	6.4%	6.2%	100.0%
	D.S or B,C	Count	33	61	30	5	13	6	148
		Expected Count	31.3	53.3	34.5	6.8	11.6	10.5	148.0
		% within Categorization of respondents based on their highest level of education	22.3%	41.2%	20.3%	3.4%	8.8%	4.1%	100.0%
	Second Level of the Univerisity Degree	Count	38	80	51	6	16	11	202
		Expected Count	42.7	72.8	47.1	9.3	15.8	14.3	202.0
		% within Categorization of respondents based on their highest level of education	18.8%	39.6%	25.2%	3.0%	7.9%	5.4%	100.0%
Total		Count	284	484	313	62	105	95	1343
		Expected Count	284.0	484.0	313.0	62.0	105.0	95.0	1343.0
		% within Categorization of respondents based on their highest level of education	21.1%	36.0%	23.3%	4.6%	7.8%	7.1%	100.0%

Source: author

Table 44: SPSS Statistics output of Chi-square tests

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	34.065[a]	20	.026
Likelihood Ratio	32.943	20	.034
Linear-by-Linear Association	1.767	1	.184
N of Valid Cases	1343		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.72.

Source: author

Table 45: SPSS Statistics output of Directional Measures

Directional Measures

			Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Somers' d	Symmetric	-.021	.023	-.891	.373
		Categorization of respondents based on their highest level of education Dependent	-.020	.023	-.891	.373
		Speak with parent using a phone, how often2 Dependent	-.021	.023	-.891	.373

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: author

Table 46: SPSS Statistics output of Symmetric Measures

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	-.021	.023	-.891	.373
	Kendall's tau-c	-.019	.022	-.891	.373
	Gamma	-.027	.031	-.891	.373
N of Valid Cases		1343			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: author

4. Results and Discussion

Hypothesis 1: There is a difference in internet usage frequency based on the generation (age group).

Based on the chi-square test results provided, there appears to be a significant association between Generational Age Groups based on Year of Birth and Internet use frequency (netusoft). The chi-square statistic yielded a value of 399.341, and the associated p-value, found in the “Asymptotic Significance (2-sided)” column, is <.001. Since the p-value is less than the standard alpha value (typically 0.05), we would reject the null hypothesis. Therefore, we can conclude that there is a statistically significant difference in internet usage frequency based on generational age groups.

Baby Boomers tend to use the internet less frequently than expected, while Gen X, Gen Y, and Gen Z exhibit varying levels of internet usage, with younger generations showing higher usage frequencies. These findings underscore the generational disparities in internet usage habits, reflecting the evolving relationship between different age groups and digital technologies.

Hypothesis 2: There is a difference in how often individuals communicate with their parents through digital means based on their generation.

Based on the chi-square test results, there appears to be a significant association between Generational Age Groups based on Year of Birth and the frequency of communication with parents through digital means (compnt2). The chi-square statistic yielded a value of 195.630, and the associated p-value, found in the "Asymptotic Significance (2-sided)" column, is <.001. We would reject the null hypothesis since the p-value is less than the standard alpha value (typically 0.05). Therefore, a statistically significant difference exists in how often individuals communicate with their parents through digital means based on generational age groups.

The analysis reveals distinct generational communication patterns: Baby Boomers use digital channels less frequently, while Gen X engages more often. Millennials show diverse communication habits, with some heavily relying on digital means, while Gen Z readily embraces digital communication with parents. These trends highlight the influence of technological shifts, with older generations preferring traditional methods and younger ones favoring digital platforms. Understanding these differences informs effective family communication strategies and interventions to enhance family connections through digital channels.

Hypothesis 3: There is a difference in how often individuals see and communicate with their parents via video calls based on their generation.

Based on the chi-square test results, there appears to be a significant association between Generational Age Groups based on Year of Birth and the frequency of communicating with

parents via video calls (scrnpnt2). The chi-square statistic yielded a value of 70.048, and the associated p-value, found in the "Asymptotic Significance (2-sided)" column, is <.001. We would reject the null hypothesis since the p-value is less than the standard alpha value (typically 0.05). Therefore, based on generational age groups, there is a statistically significant difference in how often individuals see and communicate with their parents via video calls.

Baby Boomers and Gen Z individuals appear to have lower than expected counts in the 'At least once a day' category. Gen X and Y show counts closer to the expected values across categories. This suggests varying comfort levels or access to video call technology among different age groups, highlighting the need to explore generational differences in digital communication preferences and capabilities further.

Several factors may influence these findings:

1. **Technological Literacy**: Baby Boomers, having grown up before the digital age, might find video calls less intuitive than Gen Z, who are digital natives and may prefer alternative communication methods.
2. **Digital Divide**: Disparities in access to technology, including internet connectivity and devices, could contribute to differences in video call frequency. Gen Z, more accustomed to a highly connected world, may have better access than Baby Boomers..
3. **Social Norms and Preferences**: Generational attitudes towards communication modes may vary. Gen X and Gen Y might prioritize video calls for emotional connection, while Baby Boomers and Gen Z may prefer other forms of interaction.
4. **Life Stages**: Consideration of life stages is crucial. Gen Z individuals, often more mobile, may rely more on video calls for family connections. At the same time, Baby Boomers may have more face-to-face interactions due to retirement or proximity to family.

Future Research Implications: Future studies could delve deeper into these aspects to gain a comprehensive understanding. Exploring generational attitudes, technological adoption, and sociocultural factors would provide valuable insights for improving intergenerational digital communication.

Hypothesis 4: There is a difference in how often individuals communicate with their parents using a phone based on their generation.

Based on the chi-square test results, there appears to be a significant association between Generational Age Groups based on Year of Birth and the frequency of communicating with parents using a phone (phonepnt2). The chi-square statistic yielded a value of 29.269, and the associated p-value, found in the "Asymptotic Significance (2-sided)" column, is 0.015. We would reject the null hypothesis since the p-value is less than the standard alpha value (typically 0.05). Therefore, based on generational age groups, a statistically significant difference exists in how often individuals communicate with their parents using a phone.

Higher education correlates with more frequent internet usage, digital literacy, and access to information. Bridging the digital divide remains crucial for a connected society.

Hypothesis 5: There is a difference in internet usage frequency based on education level.

Based on the chi-square test results, there appears to be a significant association between Education Category and Internet use frequency (netusoft). The chi-square statistic yielded a value of 168.322, and the associated p-value, found in the "Asymptotic Significance (2-sided)" column, is <.001. We would reject the null hypothesis since the p-value is less than the standard alpha value (typically 0.05). Therefore, we can conclude that there is a statistically significant difference in internet usage frequency based on respondents' education levels.

This finding underscores the influence of education on internet usage habits, suggesting that individuals with higher levels of education may exhibit more frequent internet usage. Higher education levels may be associated with greater access to and familiarity with digital technologies, leading to increased internet usage. Further research could explore the factors driving this relationship and its implications for digital inclusion and access to information.

Hypothesis 6: There is a difference in how often individuals communicate with their parents through digital means based on their education level.

Based on the chi-square test results, there appears to be a significant association between Education Category and Frequency of Communication with Parents via Digital Means (compnt2). The chi-square statistic yielded a value of 82.302, and the associated p-value, found in the "Asymptotic Significance (2-sided)" column, is <.001. We would reject the null hypothesis since the p-value is less than the standard alpha value (typically 0.05). Therefore, we can conclude that there is a statistically significant difference in how often individuals communicate with their parents through digital means based on their education level.

This finding underscores the influence of education on digital communication behaviors within family dynamics. Higher levels of education may be associated with greater comfort and proficiency in using digital communication technologies, leading to more frequent interactions with parents through these platforms.

Hypothesis 7: There is a difference in how often individuals see and communicate with their parents via video calls based on their education level.

Variables: scrnpnt2 (Speak with parent and see each other on a screen, how often2), Education_Category(Categorization of respondents based on their highest level of education).

Based on the chi-square test results, there is a significant association between the Education Category and the frequency of communicating with parents via video calls (scrnpnt2). The chi-square statistic yielded a value of 58.117, and the associated p-value, found in the "Asymptotic Significance (2-sided)" column, is <.001. We would reject the null hypothesis since the p-value is less than the standard alpha value (typically 0.05). Therefore, we can conclude that there is a statistically significant difference in how often individuals see and communicate with their parents via video calls based on their education level.

Specifically, individuals with higher education levels tend to engage in video calls with their parents more frequently than those with lower education levels. This highlights the influence of education on adopting and utilizing digital communication technologies within family dynamics.

Hypothesis 8: There is a difference in how often individuals communicate with their parents using a phone based on their education level.

Variables: phonepnt2 (Speak with parent using a phone, how often2), Education_Category(Categorization of respondents based on their highest level of education).

Based on the chi-square test results, there is a significant association between the education level of respondents and the frequency of communicating with parents via phone calls. The chi-square statistic yielded a value of 34.065, and the associated p-value is .026. We reject the null hypothesis since the p-value is less than the standard alpha value (typically 0.05). Therefore, there is a statistically significant difference in how often individuals communicate with their parents using a phone based on their education level.

The analysis reveals that individuals with primary education communicate via phone more frequently than expected. Conversely, those with secondary education exhibit lower phone communication rates than anticipated, particularly with higher counts in the 'Less often' and 'Never' categories. On the other hand, respondents with secondary education certifications, D.S. or B.c., and second-level university degrees tend to communicate several times a week.

Recommendation: Based on this analysis, further exploration is recommended to understand the reasons behind the lower phone communication rates among individuals with secondary education. Factors such as work commitments, lifestyle choices, or cultural differences may influence this trend and warrant closer investigation.

5. Conclusion

In conclusion, this thesis explored the landscape of digital social communication in the Czech Republic, focusing on the influence of generational cohorts and education levels. Through statistical analysis utilizing data from the European Social Survey 2020 (ESS2020), significant insights have been gained into the patterns and trends shaping digital communication behaviors within this context.

The results revealed significant differences in digital communication practices across generational cohorts. Younger generations, such as Millennials and their Generation Z, have shown higher levels of digital engagement than baby boomers, highlighting the evolving dynamics of digital communication within society. Furthermore, the analysis identified specific communication preferences and habits unique to each generational group, which are likely to be influenced by each generation's historical context. These observations highlight the need for customized approaches to meet the needs of diverse users.

Furthermore, the influence of education levels on digital communication behaviors emerged as a significant factor. Individuals with higher education levels exhibited more proficiency and comfort in utilizing digital communication tools, engaging more frequently in various forms of digital interaction. Conversely, those with lower education levels demonstrated lower levels of digital engagement, indicating potential barriers to digital literacy and access.

For statistical analysis, the chi-square test was used to examine relationships between variables and rigorously test hypotheses. Descriptive statistics were used to summarize important characteristics of the dataset, providing insight into central trends and variations within digital communication patterns. Inferential statistics, specifically chi-square tests, were used to identify statistically significant differences in digital communication behaviors between different demographic groups. This comprehensive approach enabled a thorough investigation of the research question and provided valuable insights into the dynamics of digital communication in the Czech Republic.

Overall, this study contributes to a deeper understanding of the complex interplay between generational cohorts, education levels, and digital communication dynamics within the Czech Republic. By identifying key trends and factors influencing digital communication behaviors, policymakers, educators, and practitioners can develop targeted strategies to enhance digital literacy, bridge the digital divide, and foster inclusive communication practices in the digital age.

6. References

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7. List of tables