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The Digital Inclusion Challenges Among Rural Migrant Employees – A Phenomenological Study

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Abstract: ***The digital age demands proficiency in Information and Communication Technologies (ICTs) for economic success and social connection, especially in cities. However, young adults migrating from rural areas to Indian cities like Bengaluru often face digital exclusion. This study explores the challenges and psychological effects of this divide on young migrant employees (aged 21-25). Using interviews with 33 participants, the research identified key barriers: limited access to technology and the internet due to cost, lack of digital literacy skills, and anxieties around using unfamiliar tools. Furthermore, the study examined the psychological impact, drawing on theories of stress and coping (Lazarus & Folkman, 1984) and self-efficacy (Bandura, 1986). Digital exclusion can act as a stressor, leading to frustration, anxiety, and feelings of inadequacy. Low self-efficacy related to technology hinders motivation and perpetuates the cycle of exclusion. While acknowledging limitations in sampling, the research offers valuable insights into the experiences of young migrants. It highlights the psychological toll of digital exclusion and its impact on integration. These findings can inform policymakers and organizations to bridge the digital divide. Targeted interventions such as training programs, subsidized internet access, and user-friendly technology design can empower migrants and foster their success in the urban workforce.***
Keywords: digital inclusion, rural-to-urban migration, digital divide, psychological factors, stress, self-efficacy, young adults

I. INTRODUCTION

In an increasingly digitalized world, access to and proficiency in digital technologies have become integral to economic participation and social integration. Rural-to-urban migration is a global phenomenon, with millions of individuals relocating to urban areas in search of improved economic opportunities. However, for rural-to-urban migrant employees, digital inclusion remains a complex and critical issue. This study delves into the multifaceted challenges they encounter in their quest for digital inclusion and explores the pivotal role played by psychological factors in shaping their experiences. While urban areas are often the epicenter of technological advancements, rural-to-urban migration has surged, with individuals seeking better employment opportunities and improved living standards. This migration trend is particularly notable in developing countries where economic disparities between urban and rural regions persist. As rural individuals transition to urban employment, they often face multifaceted challenges, especially in the realm of digital inclusion.

Rural-to-urban migration is a global phenomenon, driven by individuals seeking improved livelihoods and wider economic opportunities (Hugo, 2012). While urban centers offer a plethora of advantages, they also present unique challenges for newcomers, especially regarding digital inclusion. Despite advancements in global internet connectivity, a persistent digital divide exists between urban and rural areas (LaRose et al., 2012). This disparity leaves many rural migrants ill-equipped to navigate the digital landscape of urban workplaces and social spheres.

This study acknowledges the psychological complexities associated with digital exclusion. Drawing upon the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), it examines how stress and anxiety arise from navigating unfamiliar technologies (Stoker, 2017). Furthermore, self-efficacy, as proposed by Bandura (1977), plays a crucial role. The belief in one's ability to overcome digital challenges can empower migrants or conversely, hinder their progress. Finally, the research explores the psychological processes of adaptation (Berry, 1997) as migrants adjust to a new urban environment and the digital demands it presents.

A. Background And Rationale

Migration, as a phenomenon, has profound implications for the individuals involved, their families, and the communities they leave behind. When rural individuals migrate to urban areas, they encounter a host of challenges, among which digital inclusion stands out as a critical factor influencing their socio-economic integration.

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Digital inclusion, defined as the equitable access to and use of information and communication technologies (ICT), has far-reaching consequences for employment, education, healthcare, and overall quality of life (Warschauer, 2003).

B. Significance of the Study

This research is significant for several reasons. Firstly, it contributes to the existing body of knowledge on digital inclusion by focusing specifically on the experiences of rural-to-urban migrant employees, a demographic that has received limited attention in the literature. Secondly, the study's findings will offer actionable insights for employers, policymakers, and non-governmental organizations striving to enhance the digital inclusion of migrant workers. By understanding the challenges faced by this population and the psychological factors influencing their technology use, stakeholders can implement targeted interventions to bridge the digital divide and promote social and economic equity.

C. Defining Digital Inclusion

Digital inclusion, at its core, refers to the equitable and meaningful access to digital technologies, such as computers and the internet, along with the skills and knowledge required to use these tools effectively (DiMaggio et al, 2003). It encapsulates not only the availability of technological resources but also the ability of individuals and communities to harness these resources for their social and economic betterment (Warschauer, 2004).

D. Theoretical Framework

Several theoretical perspectives shed light on the intricate relationship between technology, migration, and social integration. The Social Capital Theory posits that social networks and relationships are crucial resources that individuals can leverage to access information and opportunities, including digital resources (Putnam, 2000). In the context of rural-to-urban migration, social networks become essential in facilitating access to digital technologies and knowledge.

Furthermore, Human Capital Theory emphasizes the importance of education and skills in enhancing an individual's productivity and employability (Becker, 1964). In the digital age, digital literacy and technology skills are integral components of human capital, influencing one's ability to navigate the contemporary workforce effectively.

E. Psychological Perspectives

Migration, especially when coupled with digital exclusion, often gives rise to psychological stressors. The Transactional Model of Stress and Coping, proposed by Lazarus and Folkman, provides valuable insights into how individuals perceive and cope with stressors (Lazarus and Folkman, 1984). In the context of our study, digital exclusion acts as a stressor, and understanding how rural-to-urban migrant employees cope with this challenge forms a significant aspect of our research objectives.

Moreover, Bandura's Self-Efficacy Theory emphasizes the role of self-belief in one's ability to overcome challenges and achieve desired outcomes (Bandura, 1977). In the realm of digital inclusion, self-efficacy plays a pivotal role, influencing how individuals approach and overcome technological challenges.

II. REVIEW OF LITERATURE

A study by Zhong et al. (2021) investigated the digital divide between urban and migrant students in China. Surprisingly, the research found no significant difference between the two groups in terms of access to, use of, and skill with technology. This suggests that economic factors alone may not be the whole picture of digital inclusion. Our research on migrant workers can contribute to this discussion by exploring additional factors like culture, education, and psychology that might influence digital inclusion in this population.

A study by Yosup et al. (2021) explored how Indonesian pre-service teachers use technology in teaching. They found that factors beyond just access, like social norms and attitudes towards technology, influence how teachers integrate it into their practice. This is relevant to our research on digital inclusion among rural-to-urban migrant workers. By understanding how social norms and attitudes affect technology use, we can develop targeted interventions and support systems tailored to their specific needs and social contexts.

Guenther et al (2020) conducted an evaluative study after three years of implementing an intervention project for the empowerment of digital inclusion in the remote areas of central Australia In order to assist the dissemination of vital digital skills and information to community members. A semi-structured interview designed for use with Digital Mentors, Digital Access Workers, inDigiMOB staff, partners, and other stakeholders associated with the programme.

The researchers interviewed 37 people, conducted 13 surveys, analysed 18 partner reports, and examined 191 activity records. All data sets were combined into a single NVivo (qualitative analysis software) database for analysis following constructivist interpretations of grounded theory. The most commonly identified outcomes emerging from thematic analysis of interview data were skills (55%), increased confidence (42%), knowledge sharing (55%), and access and equity (39%).

Johnson et al., (2020) examines two major technology-driven trends in the workplace and presents evidence for their impact on mental health, both positive and negative. Technology in workplaces is typically designed to increase productivity and improve organisational outcomes, with often little consideration of the impact on employees. For example, the pervasive presence of technology can produce a 'norm of responsiveness' which has been linked to increased perceived demands, unrealistic performance and productivity expectations, and feelings of increased mental exhaustion (Perlow, 2012). The results shows that Involving employees through participatory practices when designing and implementing changes to the technology–work interface protects their mental health and improves well-being at work.

Dosono (2013) examined the digital inclusion efforts on migrant youths of Yakima Valley. The mentioned demographic area is designated as an economically distressed area with low wages, significant unemployment, and high poverty levels. This research involves reviewing literature on the information ecosystem of the Yakima Valley, interviewing relevant school district administrators of Educational School District 105 in South Central Washington, and evaluating current educational technology access strategies within the region. By way of grounded theory, the researcher's work paints a clearer picture of current digital inclusion efforts towards migrant youth and provides transferable recommendations as to how they can better participate in today's digital economy.

Mehra et al., (2004) focused on three different digital divide studies each of which represents a different group of marginalized society members such as Low-income families, sexual minorities and African-American women. The aim is to step outside simple digital divide categories to understand how marginalized members of society incorporate computers and the internet into their daily lives in ways that are meaningful to them. There is a need to acknowledge the multiple conceptualizations and forms of internet use as disadvantaged users apply these differently for meeting specific agendas. It also calls for active participation of minority and marginalized users based on a reconfiguration of relationships surrounding all aspects of internet access, training, content development and system design and evaluation.

Fisher's (2004) work in studying the information behavior of migrant Hispanic farm workers and their families in the Pacific Northwest generally perceived migrant workers as information poor, meaning they face major challenges with finding and using greatly needed everyday information. Migrant workers are defined by the United Nations (1990) as people who are engaged or have been engaged in remunerated activities in a State of which they are not national, have substantial information and practical needs for help with adjusting to life in a new country. Personal networks are a highly favored information source for migrant workers. Secondary sources include radio, television, and print media, although many factors determine the use of ICT among immigrant populations. Migrant workers are more likely to trust face-to-face communication from their social networks in personal environments like church, school, and the workplace.

In their study titled "Digital Inclusion in Rural Areas: A Qualitative Exploration of Challenges Faced by People From Isolated Communities," Valderrama-Murillo et al. (2016) explored the challenges faced by individuals living in geographically isolated communities regarding internet adoption. Utilizing a qualitative approach, they investigated the interplay between individual characteristics and the broader context in influencing internet use. Their findings highlight the importance of understanding not just demographic factors, but also individual experiences, attitudes, and limitations within the specific context of these communities, emphasizing the need for multifaceted approaches to addressing digital exclusion in rural areas (Valderrama-Murillo et al., 2016). This aligns with the growing recognition that solely focusing on demographics offers limited solutions to the complex issue of digital exclusion in rural contexts.

While not directly addressing migrant workers, Bertot et al. (2014) offer valuable insights into the broader context of digital inclusion in rural areas. Their study explores the issues and challenges faced by rural public libraries in facilitating digital inclusion. The findings highlight the need for addressing various barriers, including infrastructure limitations, lack of digital literacy skills, and inadequate resources within rural communities. This resonates with the potential challenges faced by rural migrant employees, suggesting that addressing broader systemic issues alongside individual needs is crucial for promoting digital inclusion (Bertot et al., 2014).

Wingfield's (2020) work specifically focuses on the intersection of digital exclusion and migrant workers during the COVID-19 pandemic. The study introduces the concept of "double disadvantage," highlighting the unique challenges faced by migrant workers due to their pre-existing vulnerabilities and the increased reliance on technology during the pandemic.

This emphasizes the need for tailored interventions and support systems to address the specific needs of this population, which aligns with the focus of your study on understanding the challenges faced by rural migrant employees in navigating the digital sphere (Wingfield, 2020).

This chapter by Wingfield et al. (2020) delves deeper into the concept of the digital divide faced by migrant workers. The study analyzes exclusion and inclusion practices experienced by migrant workers, highlighting the interplay of various factors like economic precarity, language barriers, and lack of access to technology and training. These findings provide valuable context for understanding the challenges faced by rural migrant employees. Their specific struggles related to navigating digital technologies in the workplace could contribute valuable insights and potential solutions to bridge the digital divide in this population (Wingfield et al., 2020).

Garcia-Ramirez and Peter (2023) explore the digital divide faced by migrant workers in South Africa. Their study investigates the role of both grassroots initiatives and policy responses in addressing this issue. They highlight the limitations faced by migrant workers due to factors like lack of documentation, high data costs, and limited digital literacy skills. The study emphasizes the importance of collaborative efforts between policymakers, NGOs, and the private sector to create sustainable solutions. This aligns with the need for multifaceted approaches to bridge the digital divide in your research, focusing not just on individual needs but also on broader systemic issues (Garcia-Ramirez & Peter, 2023).

Jampacha and Limmanon (2022) delve into the lived experiences of digital exclusion and inclusion among migrant workers in Thailand. Through qualitative research, they explore the various factors contributing to both exclusion and inclusion, such as access to technology, digital literacy skills, and workplace practices. Their findings highlight the complex interplay between individual agency, employer support, and broader societal structures in shaping the digital experiences of migrant workers. This resonates with your research's focus on understanding the lived experiences of rural migrant employees navigating the digital sphere (Jampacha & Limmanon, 2022).

This research by Rao and Deepshikha (2021) examines the interrelationships between access, skills, and usage of technology among rural-urban migrants in India. Their findings suggest that simply addressing access is not enough; digital literacy skills and opportunities for practical application are crucial for bridging the digital divide. This aligns with the potential need to consider not just access to technology but also the ability and motivation of rural migrant employees to utilize it effectively in your research (Rao & Deepshikha, 2021).

III. METHODOLOGY

A. *Aim*

The aim of this qualitative research study is to investigate the digital inclusion challenges faced by rural-to-urban migrant employees and explore the role of psychological factors in mediating their experiences and outcomes in the urban workplace

B. *Concept*

The goal of Digital Inclusion is to enable everyone to access and use digital technologies effectively. It goes beyond simply owning a computer or smartphone. At heart, digital inclusion is about social and economic participation: using online and mobile technologies to improve skills, enhance quality of life, educate, and promote wellbeing across the whole of society. (Thomas et al., 2016)

C. *Objectives*

1) To identify and describe the specific digital inclusion challenges experienced by rural-to-urban migrant employees.
2) To explore the psychological factors, such as stress, self-efficacy, and adaptation, that affect the relationship between technological challenges and work-related outcomes.
3) To examine how rural-to-urban migrant employees cope with technological challenges and the strategies they employ.
4) To provide recommendations for organizations and policymakers to create supportive work environments for this population.

D. *Sample and Techniques*

This study employed a convenient sampling method to recruit a sample of 33 participants. The participants were all employees aged 21-25 who had migrated from rural areas to Bengaluru, a major urban center in India.

This specific age group and migration background were chosen to focus on the challenges faced by young adults as they navigate a new digital landscape in an urban environment.

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E. Tools for the Study

- Socio-demographic Sheet
- Semi-structured Interview questions.

F. Research Design

This research uses qualitative phenomenological approach. Thematic analysis for the analysis part.

G. Procedure

Self-constructed questionnaire will be formulated based on the objectives and will be given to field experts for review. Experts are approached with a consent form and the reviews will be taken into consideration. Once the questionnaire is revised with expert reviews, finally will proceed with drafting the questions for the interview. Samples are identified and will be approached with the consent form. People who gave consent were asked to fill the Google form which includes the demographic details such as their name, age, sex, religion, mother tongue, education, qualification, domicile, birth order and family type. The interview started with building a rapport and providing necessary information about the study. After collecting the data, thematic analysis will be used with obtained verbal data. Using this method, we can group the themes to identify the patterns and meaning within the qualitative data. They were assured of their anonymity and the confidentiality of the information collected during the research study. The interviews were audio recorded and the transcript of the same was done and the data has been obtained. Using the six-phase guide for the thematic analysis of the obtained data by Braun & Clarke (2006).

1) PHASE 1: Generating items through focus group discussion

STEP-1: Individual interview of experts

Because the experts were unable to spare a common time, the initial focus group discussion was done as individual interviews. Experts from a variety of professions were interviewed, including community workers, diversity and inclusion managers, and a member of a non-governmental organisation (NGO), urban workers, and parents. The interview questions were made up of four questions that were used to determine the areas needed to be explored.

STEP-2: Focus group discussion

The focus group discussion was conducted to identify the concepts, consequences, perspectives that come under digital inclusion challenges.

STEP-3: Item Generation for Semi-Structured Interview:

Semi Structured Interview:

- Can you share an experience where you had to quickly learn and adapt to a new device or software?
- Can you describe your experience with accessing digital devices and the internet? Are there any challenges you faced in accessing technology
- Are there specific economic challenges that people face in acquiring digital technology?
- Describe a recent experience where you found a digital technology exceptionally easy to use. What aspects of the user interface or design contributed to its ease of use?
- When you encounter problems with your device or software, how do you usually approach troubleshooting?
- How do you initiate and maintain conversations with others using digital platforms such as messaging apps or social media?
- Are you involved in any digital initiatives or online campaigns related to social issues or causes? Can you describe your involvement?
- Can you describe a successful collaborative project you worked on using digital technologies? What challenges did you overcome?
- Have you ever encountered online trolls (this could also mean if they have seen online trolls) or cyberbullying? How did you handle the situation, and what strategies do you think are effective in dealing with such behavior?
- Do you create digital content? If yes, Can you describe the process you follow when creating digital content, such as videos, graphics, or blog posts? What tools or software do you typically use?
- Have you ever encountered online situations that caused nervousness or fear? How did you address these feelings, and what measures do you take to protect your online well-being?

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- What emotions do you typically associate with digital inclusion challenges? (e.g., frustration, anger, embarrassment, relief upon overcoming a challenge)
- Can you recall a specific digital experience that caused you emotional distress? What were the exact feelings and emotions you experienced during that situation?
- How do digital inclusion challenges impact your self-esteem and self-worth? Do these challenges ever make you question your abilities or intelligence?

2) PHASE-2:

STEP-1: Expert rating

This step encompasses sending rough draft of questions to 5 experts in the field.

STEP-2: Final draft of questions

Based on the understanding and expertise, they will rate the question's relevance to the topic on the scale of 0-3 where 0- completely irrelevant, 1- slightly irrelevant, 2- slightly relevant and 3- completely relevant. The expert's rating and suggestions will be taken into consideration for the final draft of questions.

3) PHASE 3: Thematic analysis Data collection

A convenient sampling method for collecting data will be used. With the semi-structured interview, the research planning to collect 30 reliable and valid data from the population and planned to conclude the interview within 9-18 minutes.

STEP-1: Becoming familiar with the data

Reading and re-reading the interview extracts that were transcribed into an excel sheet is the initial stage in any qualitative study.

STEP-2: Generate initial codes

Organizing data in a logical and systematic way as soon as started writing the initial code. To break the data down into smaller bits of meaning, colour coding can be done.

STEP-3: Search for themes

A theme is a pattern in data or a research issue that captures something noteworthy or fascinating about it. Making certain that the topics do not overlap and that the content was meaningful and significant. Looking through the codes and seeing that they are arranged into major themes that seemed to speak to the study issue specifically.

STEP-4: Review themes

The early themes will be identified in the previous step were reviewed, updated, and developed during this phase. Gathering any data that could be related to a theme and re - examined it to see if it supported the theme.

STEP-5: Define themes

The goal is to identify the essence of each subject in this final refinement of the ideas.

STEP-6: Write-up

Following the definition of the themes, a report will be written to clarify the topics and their relationships.

IV. DISCUSSION

Overall results from the data collected and the analysis performed are discussed in this chapter. This chapter is arranged based on themes identified from the verbatim of responses to the semi-structured interview questions. The discussion is arranged based on the themes that has been identified through thematic analysis. The semi-structure interview focuses on the areas of Access and affordability, User experience and skills, Digital communication and collaboration, Digital content creation and consumption, Emotional impact and Sense of control and agency. Total of 33 participants agreed to take part in the study. The responses were categorized according to the focused areas respectively. Codes and sub-codes were identified for each category and themes were formed

Table 1: The demographic details of the participants

	Group	Frequency	Percentage
Age	21-25	33	100
Sex	Male	18	54.5
	Female	15	45.4
Domicile	Urban	3	9.09

	Semi-urban	14	42.4
	Rural	16	48.4
Family structure	Joint	4	12.1
	Nuclear	29	87.8
Birth order	First born	12	36.3
	Second born	9	27.2
	Third born	12	36.3
Work experience	0-2 years	26	78.7
	2-5 years	7	21.2

The no. of participants in the age category 21-25 were 33 (100%). Out of the total participants of 33, the number of male participants were 18 (54.5%) and number of female participants were 15 (45.4%). Participants from urban were 3 (9.09.3%), semi-urban were 14 (42.4%) and rural was 16 (48.4%). Participants belonging to a nuclear family structure were 29 (87.8%) and joint family structure were 4 (12.1%). Participants of 1st birth order were 12 (36.3%), 2nd birth order were 9 (27.2%) and 3rd birth order was 12 (36.3). Participants having work experience of 0-2 years were 26 (78.7%) and 2-5 years of experience were 7 (21.2%).

Table 2: Initially extracted codes and sub-codes

S.no	Themes	No. of. Codes	No. of. Sub codes
1	Access and affordability	2	7
2	User experience and skills	3	13
3	Digital communication and collaboration	3	17
4	Digital content creation and consumption	4	12
5	Emotional impact	2	12
6	Sense of control and agency	3	14

The thematic analysis initially identified six themes: access and affordability, user experience and skills, digital communication and collaboration, digital content creation and consumption, emotional impact, and sense of control and agency. ‘Access and Affordability’ theme yielded two codes with seven sub-codes. Three codes and thirteen sub-codes emerged from theme ‘User experience and skills’. ‘Digital Communication and Collaboration’, the analysis of this theme resulted in three codes and seventeen sub-codes. Four codes and twelve sub-codes were identified within theme ‘Digital Content Creation and Consumption’. Two codes and twelve sub-codes were extracted from theme ‘Emotional Impact’. Three codes with fourteen sub-codes were generated from theme ‘Sense of control and agency’.

Table 3: Code book

S.no	Themes	Codes	Sub codes
1	Access and affordability	Barriers to access	Lack of internet connectivity in rural areas, Poor internet quality, Difficulty understanding technology, Lack of digital skills training.
		Cost of devices and internet	High cost of devices, Limited internet data plans, Lack of affordable options.
2	User experience and skills	Learning and adaptability	Comfort with new technologies, Eagerness to learn new skills, Difficulty adapting to new interfaces, Self-directed learning, Seeking help from others.

		Perception of ease of use	User-friendly interface, Clear instructions.
		Troubleshooting techniques	Independent troubleshooting, Restarting devices, Searching online for solutions, Seeking external help, Relying on friends/family, Contacting tech support.
3	Digital communication and collaboration	Platform and tools	Use of messaging apps, Preference for specific platforms, Challenges with using messaging apps, Online collaboration tools, Experience with project management tools, Difficulty navigating collaboration features.
		Communication styles	Clear and concise messages, Understanding online etiquette, Challenges with online communication, Misunderstandings due to lack of nonverbal cues, Difficulty expressing oneself clearly.
		Social support networks	Online support communities, Finding help and information online, Feeling a sense of belonging, Offline support, Relying on friends/family for technical assistance, Importance of face-to-face communication.
4	Digital content creation and consumption	Content creation practices	Sharing photos and videos, Creating blog posts or articles, Use of free editing apps, Preference for specific content creation platforms.
		Content consumption habits	Social media news feeds Online news websites Difficulty distinguishing credible sources Awareness of online misinformation
		Perceptions of online content (positive)	Access to diverse information and entertainment Feeling connected to a global community
		Perceptions of online content (negative)	Exposure to harmful content (cyberbullying, hate speech) Feeling overwhelmed by information overload
5	Emotional impact	Positive impact	Empowerment, Feeling confident navigating the digital world, Ability to connect with others online, Enjoyment, Finding entertainment and pleasure online, Feeling a sense of community.
		Negative impact	Frustration, Difficulty using technology, Exhaustion while dealing with slow internet connections, Anxiety, Concerns about online privacy and security,

			Fear of online harassment.
6	Sense of control and agency	Perceptions of Online Privacy	Understanding of privacy settings, Feeling comfortable managing online data, Concerns about data breaches, Using privacy controls on social media platforms, Avoiding sharing personal information online.
		Content Management	Ability to curate online experience, Choosing what content to consume, Blocking unwanted content, Feeling overwhelmed by online content, Difficulty filtering information overload, Difficulty disconnecting from the digital world.
		Online influence and management	Feeling heard and understood, Participating in online discussions, Expressing oneself effectively online.

This codebook organizes themes related to the digital divide and its impact on users. It explores challenges like affordability, user experience, and skill development faced by those lacking access to technology. It also examines how people interact with digital tools and platforms, their communication styles, and collaboration methods in the digital space. Furthermore, it dives into how users create, consume, and evaluate digital content, including their content creation practices, information consumption habits, and the impact of information overload. The codebook also explores the emotional impact of digital experiences, encompassing both positive emotions like empowerment and enjoyment, and negative emotions like frustration and anxiety. Finally, it looks at how users feel about their control over their online experiences, including their perceptions of privacy, content management strategies, and the feeling of influence and impact within the digital space.

1) Theme 1: Access and Affordability

The theme of access and affordability emerged as a significant barrier to digital inclusion within the study. This theme encompasses two main codes such as barriers to access and cost of devices and internet. Participants highlighted several issues hindering access to technology. Lack of internet connectivity in rural areas and poor internet quality were frequently mentioned challenges. One participant stated, "The internet here is terrible. It takes forever to load anything, and forget about streaming videos." This sentiment reflects the limitations faced by individuals residing in areas with underdeveloped infrastructure. Additionally, difficulty understanding technology and the lack of digital skills training were identified as obstacles. Another participant expressed, "I find using computers and smartphones confusing. I wish there were more classes to help people like me learn the basics." These quotes illustrate the need for initiatives that address not only physical access but also digital literacy skills. The high cost of devices and internet plans was another major barrier. High cost of devices, limited internet data plans, and a lack of affordable options were all sub-codes identified within this category. A participant shared, "Saving up for a new laptop felt like forever. I used libraries a lot in the meantime, but it wasn't ideal." This statement highlights the financial burden associated with acquiring necessary technology. Limited data plans further restrict online activity, as another participant noted, "The internet on my phone is so slow, and the data plan runs out quickly. I have to be very careful about what I do online." These experiences emphasize the need for more accessible and affordable options for both devices and internet access.

2) Theme 2: User experience and Skills

The theme of user experience and skills emerged as a crucial factor influencing digital inclusion. This theme encompasses three main codes: learning and adaptability, perceptions of ease of use, and troubleshooting techniques. Participants exhibited varying levels of comfort with new technologies. Some individuals expressed comfort with new technologies and an eagerness to learn new skills. One participant stated, "I love figuring out new gadgets and apps. It keeps me feeling young." This highlights the intrinsic motivation some individuals have for digital exploration. However, others reported difficulty adapting to new interfaces. A participant shared, "These new smartphones are confusing! I miss the buttons on my old flip phone." This quote emphasizes the importance of user-friendly design that caters to varying levels of technical expertise.

The user-friendliness of interfaces and the clarity of instructions significantly impacted user experiences. Participants appreciated applications with intuitive designs and clear guidance. "The online banking app is super easy to use. Everything is clearly labelled and easy to find." (Participant quote). Conversely, complex interfaces and unclear instructions could lead to frustration. Participants employed various strategies for dealing with technical difficulties. Some preferred independent troubleshooting, such as restarting devices or searching online for solutions. "When my laptop freezes, I usually restart it first. If that doesn't work, I call my tech-savvy cousin for help." (Participant quote). Others relied on seeking external help from friends, family, or tech support. This highlights the importance of readily available support mechanisms for those who require additional assistance.

3) Theme 3: Digital Communication and Collaboration

The theme of digital communication and collaboration emerged as an important aspect of digital inclusion. This theme encompasses three main codes: platforms and tools, communication styles, and social support networks. Participants utilized various platforms for communication, with a strong preference for messaging apps. They expressed specific platform preferences, highlighting their familiarity and ease of use. "Mostly I use WhatsApp to chat with family back home. It's simple and everyone uses it." (Participant quote). However, some participants reported challenges with using messaging apps, such as navigating features or understanding etiquette. Effective communication involved clear and concise messages and an understanding of online etiquette. Participants who adhered to these practices reported smoother interactions. "I try to keep my messages short and to the point, and I always use emojis to show I'm friendly." (Participant quote). Conversely, challenges arose from the lack of nonverbal cues, leading to misunderstandings and difficulty expressing oneself clearly. Both online support communities and offline support networks played a role in digital communication. Participants utilized online support communities to find help and information and feel a sense of belonging. "There's a great online forum for people learning how to code. I've gotten so much help there." (Participant quote). However, offline support from friends and family remained crucial, especially for technical assistance and the importance of face-to-face communication. "I rely on my kids to help me set up new apps and troubleshoot any problems." (Participant quote).

4) Theme 4: Digital Content Creation and Consumption

The theme of digital content creation and consumption emerged as a multifaceted aspect of digital inclusion. This theme encompasses three main codes: content creation practices, content consumption habits, and perceptions of online content. Participants engaged in various content creation activities, including sharing photos and videos and creating blog posts or articles. They utilized a range of tools, with a preference for free editing apps. "I like to edit my photos before posting them on Instagram. There are so many great free editing apps available." (Participant quote). The choice of platform also played a role, with participants expressing preferences for specific content creation platforms. Participants primarily consumed content through social media news feeds and online news websites. However, a key challenge was difficulty distinguishing credible sources and awareness of online misinformation. "I sometimes worry about the accuracy of the things I see on Facebook. It's hard to know what to believe." (Participant quote). This highlights the need for digital literacy skills to navigate the vast amount of online information effectively. Positive perceptions included access to diverse information and entertainment and a sense of feeling connected to a global community. "The internet allows me to learn about anything I'm interested in, and I can connect with people from all over the world." (Participant quote). However, negative perceptions involved exposure to harmful content such as cyberbullying and hate speech, as well as feeling overwhelmed by information overload. "Sometimes I get sucked into scrolling through social media for hours, and it can feel overwhelming." (Participant quote). These contrasting experiences underscore the importance of responsible content consumption practices.

5) Theme 5: Emotional Impact of Digital Inclusion

The theme of emotional impact emerged as a significant factor in digital inclusion. This theme encompasses two main codes: positive impact and negative impact. Digital inclusion offered several emotional benefits to participants. Empowerment came from feeling confident navigating the digital world and the ability to connect with others online. "Since joining that online book club, I feel much more connected to people who share my interests." (Participant quote). Additionally, enjoyment was derived from finding entertainment and pleasure online and feeling a sense of community. "I love watching funny cat videos on YouTube. It's a great way to relax after a long day." (Participant quote). These experiences highlight the potential for digital technology to foster positive emotions and social connections. However, digital inclusion also presented emotional challenges. Frustration arose from difficulty using technology and exhaustion while dealing with slow internet connections. One participant stated, "It's so frustrating when the internet keeps cutting out. I can never seem to finish anything online."

(Participant quote). Furthermore, anxiety surrounded concerns about online privacy and security and fear of online harassment. "I worry about my personal information getting stolen online. It makes me hesitant to share anything." (Participant quote). These negative emotions highlight the importance of addressing usability issues, promoting online safety practices, and fostering a respectful online environment.

6) Theme 6: Sense of Control and Agency in the Digital World

The theme of sense of control and agency falls under the broader category of User Agency and Control in the Digital World. This theme explores how individuals perceive their ability to influence and manage their experiences within the digital space. It encompasses three main codes: perceptions of online privacy, content management, and online influence and impact. Understanding and managing online privacy significantly impacted participants' sense of control. Understanding of privacy settings and feeling comfortable managing online data empowered individuals. "I've learned how to adjust my privacy settings on social media. It makes me feel more in control of who sees my information." (Participant quote). Conversely, concerns about data breaches could create a sense of vulnerability. The ability to curate online experiences fostered a sense of control. Participants valued the ability to curate online experience by choosing what content to consume and blocking unwanted content. "I use content filters to avoid seeing negativity online. It helps me focus on the things I enjoy." (Participant quote). However, feeling overwhelmed by online content and the difficulty filtering information overload could lead to a sense of powerlessness. Feeling heard and understood online contributed to a sense of agency. Participating in online discussions and expressing oneself effectively online empowered individuals. "I like being able to share my thoughts on social media. It feels like my voice can be heard." (Participant quote).

V. SUMMARY AND CONCLUSION

This research investigated the experiences of young adults (21-25 years old) regarding digital inclusion. Thematic analysis revealed six key themes: access and affordability, user experience and skills, digital communication and collaboration, digital content creation and consumption, emotional impact, and sense of control and agency.

Access and affordability emerged as significant barriers. Similar to prior research by Hargittai & and Robinson (2003) and Van Deursen & Ewijk (2016), participants in remote areas faced challenges with internet connectivity and quality. Additionally, the cost of devices and data plans restricted access, mirroring the findings of Perrin (2022). These limitations highlight the need for infrastructure development and subsidized options to bridge the digital divide.

User experience and skills varied among participants. While some displayed comfort and eagerness to learn new technologies, aligning with Papastergiou & Charitonos (2017), others struggled with adapting to new interfaces. This underscores the importance of user-friendly design that caters to diverse technical abilities (Czarniawska, 2017). Furthermore, participants employed various troubleshooting techniques, with some preferring independent approaches and others relying on external support. This aligns with the work of Weller et al. (2017) who identified the value of both self-service solutions and readily available assistance.

Digital communication and collaboration played a central role. Messaging apps were the preferred platform, echoing the findings of Lenhart et al. (2018). However, challenges arose with navigating features and online etiquette. Effective communication relied on clarity and understanding online norms, similar to Jones et al. (2021). Both online support communities and offline social networks provided valuable connections, highlighting the multifaceted nature of digital interaction (Wang & Quan, 2018).

Digital content creation and consumption practices were diverse. Participants engaged in activities like photo sharing and content creation, aligning with Lenhart et al. (2018). However, challenges existed in identifying credible sources and managing information overload, as identified by Livingstone et al. (2017). Positive perceptions included access to information and entertainment, while negative experiences involved exposure to harmful content. These findings highlight the need for digital literacy education to promote responsible content creation and consumption habits (Hassan et al., 2021).

The emotional impact of digital inclusion was twofold. Positive emotions included empowerment, enjoyment, and a sense of community, which resonate with the work of Wei et al. (2019). However, frustration, anxiety, and fear of online harassment also emerged, mirroring Stoker (2017). These findings emphasize the importance of user-friendly interfaces, promoting online safety practices, and fostering a respectful online environment.

Finally, the sense of control and agency was linked to perceptions of online privacy and content management. Similar to Bélanger & Davison (2010), understanding privacy settings empowered participants. The ability to curate online experiences through content selection and blocking unwanted content fostered a sense of control. However, information overload could lead to feelings of powerlessness. Overall, fostering a sense of agency requires empowering individuals to manage their online privacy and curate their digital experiences.

In conclusion, this research highlights the multifaceted nature of digital inclusion for young adults. While technology offers opportunities for connection, learning, and enjoyment, challenges remain regarding access, skills development, and emotional well-being. By addressing these challenges through infrastructure development, user-centered design, digital literacy education, and promoting online safety, we can create a more inclusive and empowering digital world for all.

A. Limitations

1) Convenient sampling relies on readily available participants, potentially leading to a sample that isn't representative of the entire population of young, rural-to-urban migrants in Bengaluru. This raises concerns about selection bias, meaning the findings may not be generalizable to the broader population.

2) With only 33 participants, the study may lack statistical power to detect significant relationships between variables. Smaller sample sizes can lead to higher margins of error, making it difficult to draw definitive conclusions.

3) Focusing solely on the 21-25 age group excludes the experiences of older migrants who may face different challenges or have adapted differently.

4) The study's focus on Bengaluru limits the generalizability of findings to other urban environments in India or elsewhere. Digital inclusion experiences and challenges may vary depending on specific locations and infrastructure.

B. Implications:

1) These limitations highlight the need for future research employing more robust sampling methods (e.g., random sampling, stratified sampling) and larger sample sizes to achieve greater generalizability. Including a wider age range and investigating experiences in different urban locations would also provide a more comprehensive picture.

2) While your study likely employs a qualitative approach (focusing on lived experiences), incorporating quantitative elements (e.g., surveys) in future research could help measure the prevalence of specific challenges and digital skills among the target population.

3) Despite limitations, the study's findings can inform the development of targeted interventions for young, rural-to-urban migrants in Bengaluru. Understanding their specific needs and challenges can guide the creation of training programs, support services, and user-friendly technology solutions to bridge the digital divide.

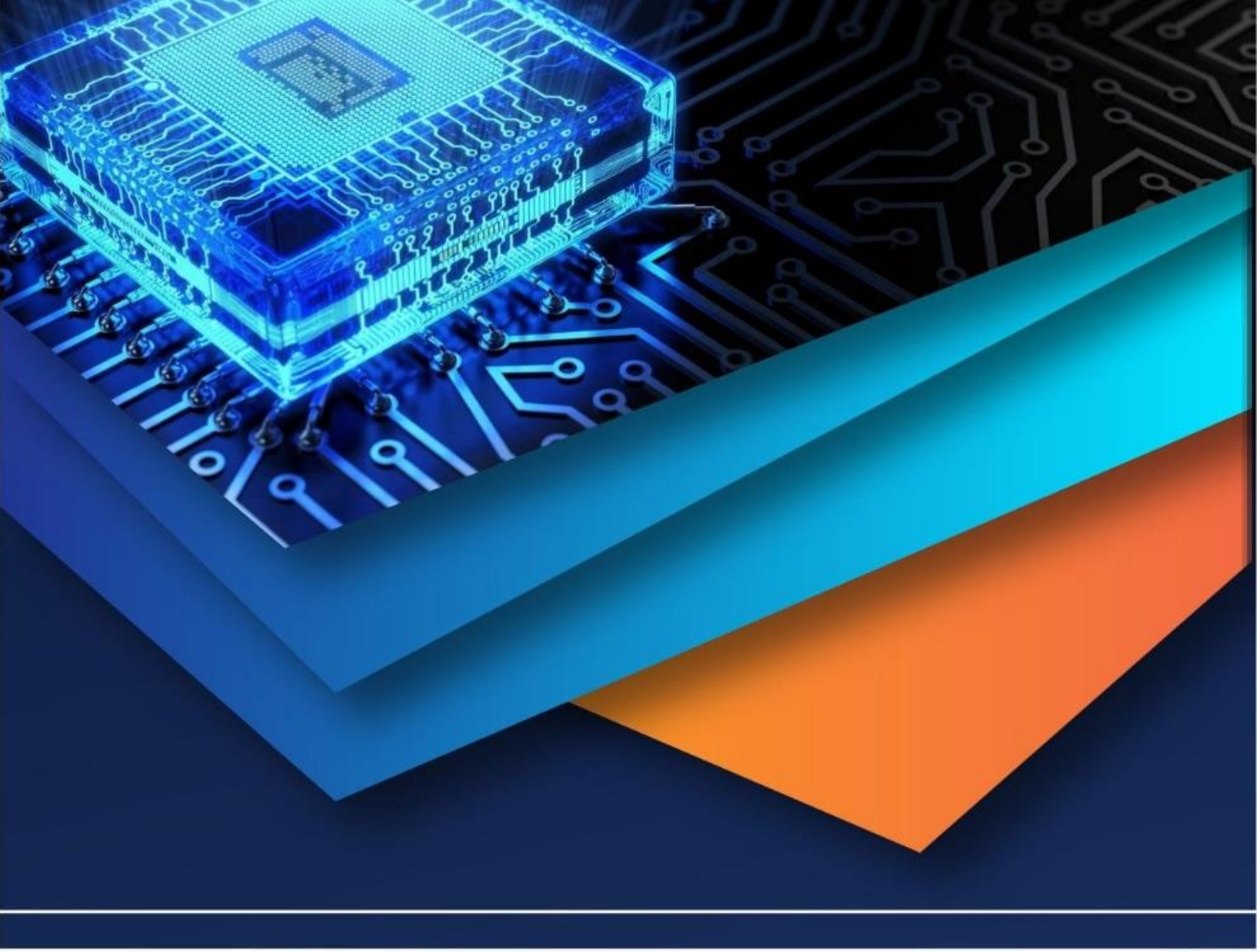
4) The study emphasizes the importance of considering context when examining digital inclusion. The specific circumstances of rural-to-urban migration in Bengaluru, including existing infrastructure, job markets, and social support networks, all influence the challenges and opportunities migrants face.

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