UNVEILING THE LEVEL OF DIGITAL POVERTY: A PHENOMENOLOGICAL STUDY ON DIGITAL POVERTY AMONG YOUTH IN DENPASAR CITY

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ABSTRACT

The advancement of technology today should be accessible to everyone and all segments of society, especially those in their teenage years and productive age. This research explores and seeks to understand how urban adolescents from low-income families perceive and experience digital poverty. Using a qualitative approach, in-depth interviews were conducted with adolescents from low-income families who are scholarship recipients. The main goal of this research is to uncover their perspectives on access to digital devices, availability of internet connections, and how they utilize the technology. The findings from the interviews indicate that most informants have limited access to technology, with some only owning mobile phones without laptops or computers, and they often rely on mobile data or public or neighbors' Wi-Fi networks. Nevertheless, some informants did not feel significantly left behind in terms of technological access, although they were aware of the disparity when comparing themselves to more affluent peers. The study also found that the use of digital technology among low-income adolescents is primarily focused on educational purposes, despite the limitations of the technological resources available to them. Given these constraints, this research suggests the importance of increasing equitable digital access and developing digital skills training programs that can help adolescents from low-income families avoid falling further behind in the rapidly advancing digital era.

Keywords: *Digital Poverty, Digital Divide, Urban Youth*

A. INTRODUCTION

Digital poverty is an increasingly prominent phenomenon in the current technological era, particularly among teenagers. Digital poverty is not only about the lack of access to digital devices or the internet but also includes skills, literacy, and the ability to leverage technology for education, communication, and participation in social life. Digital poverty is a new form of poverty phenomenon

that is easily found in developing countries. Similar to poverty, digital poverty ia a complex and multidimensional problem related to social, cultural, economic and so forth aspects (Mulyadi, 2024).

According to Roxana Barrantes, digital poverty is not only related to the inability to access technology but also encompasses the inability to utilize technology effectively (Barrantes, 2010). Among teenagers, who are growing up amidst rapid technological development, digital access plays an important role in supporting their academic, social, and career development. However, for teenagers from low-income families, limited digital access can hinder their potential and worsen social inequalities.

In Indonesia, the digital divide between teenagers from well-off families and those from low- income families has become increasingly evident, especially during the COVID-19 pandemic. When the education system shifted to online learning, many teenagers from poor families struggled to keep up with their studies due to a lack of access to adequate digital devices and a stable internet connection. This not only hindered these teenagers from participating in formal education but also limited their opportunities to access online resources for knowledge and skill development. This gap can deepen existing inequalities and have long-term impacts on the future of the younger generation. Digital poverty is not limited to technical issues such as devices and connectivity; it also includes aspects of skills and digital literacy. Teenagers from poor families often receive little support to develop the technological skills needed in today's world. These teenagers may not be familiar with effective ways to search for information, communicate professionally, or even manage digital security risks. This creates a significant gap in their ability to compete in a labor market that increasingly relies on digital skills. According to Roxana Barrantes in her paper Digital Poverty: An Analytic Framework, four factors influence the level of digital poverty (Barrantes, 2010): (1) Age, Age is often considered an indicator of a lack of technological skills. The older a person is, the less likely they are exposed to digital technology, making it harder for them to adapt; (2) Education, Education is closely related to digital skills, as educational institutions provide access to digital tools and literacy. People with higher education levels tend to have better skills to use technology productively; (3) Available infrastructure, in areas with limited infrastructure, more individuals are likely to experience digital poverty; (4) Achieved functions, achieved functions refer to how a person uses technology, ranging from passive information reception to active interaction.

Several studies related to digital poverty have been conducted. A previous study titled Analysis of Digital Poverty in Indonesia in the Era of the Fourth Industrial Revolution by Permata Sakti emphasized mapping and analyzing the state of digital poverty and the factors influencing it. The study by Permata Sakti produced a quadrant analysis that included digital poverty and economic conditions (Sakti, 2022)

Another study was conducted by Anton Susanto under the title Analysis of Digital Poverty in Indonesia. This study focused on analyzing the condition of digital poverty in Indonesia by examining pro-poor policies in the country (Susanto, 2016). Unlike the previous studies, which tended to focus on an overall

analysis of digital poverty and its relation to pro-poor policies, this research offers a new perspective on understanding digital poverty by exploring it from the perspective of teenagers, which has not been widely explored in prior studies.

This study examines digital poverty using Barrantes' four categories of digital poverty (Barrantes, 2007). This study will help the researcher categorizes the digital poverty conditions of adolescents. The four categories of digital poverty are: (1) Extremely digitally poor. Extremely digitally poor is who only use technology to receive information, usually due to a lack of knowledge or communication services. Age or learning capacity can be a barrier for people in this category; (2) digitally poor. Digitally poor are who have access to communication media and can receive and communicate, but their digital use is limited due to a lack of resources or human capital, such as low education levels, illiteracy, or advanced age; (3) Connected. This category for people who have internet access but use it passively, merely replacing traditional ways of consuming information without changing how they interact with information providers. And the last is (4) digitally rich. This category for people who have internet access and use it actively, with the ability to leverage electronic services such as government applications or make transactions, showing active interaction and use of ICT (Information and Communication Technology).

B. LITERATURE REVIEW

Research on poverty and digital access has been widely conducted by various scholars from different perspectives. The study by Yusup, Racmawati, and Subekti (Pawit M. Yusup, Tine Silvana Rahmawati, & Priyo Subekti, 2014) seeks to understand poverty from the perspective of rural poor communities. In their research, although the informants are objectively categorized as poor, the term "poor" was never used in their personal or social conversations. This study uses a phenomenological approach, which aligns with this research; however, the difference lies in the primary focus. While Yusup and colleagues emphasize the meaning of poverty in a rural context, this research focuses on how digital access is perceived by adolescents from low-income families in urban areas.

Meanwhile, the quantitative study by Mulyaningsih, Wahyunengseh, and Hastjarjo (Mulyaningsih, Wahyunengseh, & Hastjarjo, 2020) focuses on the digital divide in urban poor neighborhoods. They found that digital diffusion is still low among the urban poor, who have yet to fully benefit from enhanced access to digital services. Their research also highlights the importance of combining traditional and digital platforms in disseminating information to poor communities.

The similarity with this study lies in the attention to digital access within the context of poverty, but Mulyaningsih's research is more focused on the distribution of digital access among the poor, while this research examines how digital access is understood by adolescents.

Permata Sakti's research examines digital poverty in Indonesia through secondary data analysis s (Sakti, 2022). The researcher found that although digital poverty in Indonesia has generally decreased between 2019 and 2020, some areas, such as Papua and West Papua, still have high digital poverty indices. This study

emphasizes the geographical and economic aspects of digital poverty measurement. In this context, Sakti's research shares a focus on digital poverty with this study, but this research highlights how digital poverty is experienced by adolescents in urban settings.

Barrantes' study on the demand for Information and Communication Technology (ICT) also contributes to the understanding of digital poverty. According to Barrantes, there are three main causes of digital poverty: lack of connectivity due to low demand, low income, and low digital literacy. This research provides an international perspective on the causes of digital poverty, particularly in Peru. While it shares a focus on digital poverty, this study differs in its research location, with Barrantes focusing on Peru, while this research focuses on adolescents in Indonesia.

Overall, previous studies offer valuable insights into various aspects of poverty and digital access. However, there remains a gap in the literature that examines the meaning of digital access among adolescents from low-income families. This study aims to fill that gap using a phenomenological approach, seeking to understand how these adolescents perceive access to digital technology in their daily lives.

Novelty of this research is focus on adolescents from low-income families. While previous studies tend to focus on digital poverty in general across different demographic groups, this research specifically examines adolescents, a vulnerable group often overlooked in studies of digital poverty. This focus provides new insights into how adolescents, especially from low-income families, experience and interpret the digital divide in their daily lives. Furthermore, in this research also use phenomenological approach to uncover adolescents' subjective experiences. Most previous studies used a quantitative approach such as Mulyaningsih and Permata Sakti, which offers a broad overview of digital access distribution and digital poverty indices. Your research employs a phenomenological approach, enabling a deeper exploration of the subjective experiences of adolescents dealing with digital poverty. This provides a more detailed understanding of how they experience digital exclusion, moving beyond mere statistics or geographical analyses. In addition, studies like Yusup focused on poverty in rural contexts and did not explicitly address the digital aspect. In contrast, your research pays special attention to digital poverty in urban settings, which is crucial given the increasing urbanization and the unique challenges and opportunities cities present for young people in terms of digital access. So, in general this research presents novelty in its demographic focus (urban adolescents from low-income families), methodological approach (phenomenology for in-depth exploration), and a more holistic understanding of digital poverty. This distinguishes your research from previous studies that focus more on quantitative, geographical, or general aspects of digital poverty.

C. METHOD

The research method used in this study is a qualitative research method with phenomenological approach. Phenomenology aims to extract the essence of participants' experiences through a narrative exploration from the participants'

perspective. In this study, the participants consist of 5 teenagers from low-income families. They share their experiences using technology in their daily lives. The results of these interviews will later serve as a reference for the researcher in categorizing digital poverty.

D. EXPLANATION

Digital Poverty is a condition where individuals or groups experience limitations in access, usage, and benefits from digital technology. The researcher will focus the analysis on two main factors influencing digital poverty. Given that the research focuses on teenagers' perspectives, informants will be teenagers with uniform age and education levels, meaning that age and education factors will be excluded. The research will examine field conditions related to the availability of infrastructure and the ability to use technology effectively. These two factors will then be detailed into access to devices, digital literacy, and the use of technology for productive purposes, influencing digital poverty among teenagers. Thus, the dimensions of digital poverty analyzed in this research include:

1. Access to Digital Devices: Limitations in owning technological devices such as smart phones, laptops, tablets, or computers needed to participate effectively in the digital world. It also includes the availability of a stable and affordable internet connection. This includes limitations in obtaining adequate internet networks, such as Wi-Fi or mobile data
2. Digital Skills: Low levels of digital skills or literacy, ranging from basic to advanced skills in using technology for work, education, or daily life.
3. Productive Use: Limitations in utilizing digital technology for productive purposes, such as education, work, online business, or access to important information.

Teenagers' perspectives on digital poverty are often shaped by their direct experiences in accessing and using digital technology. For many teenagers, access to mobile phones and the internet is considered sufficient to meet daily needs, especially in terms of communication, social media, and education. Teenagers may not always feel constrained by the lack of devices such as laptops or a stable internet connection, as they have adapted to the situation. Based on interviews conducted with five informants regarding teenagers' views, the results were as follows:

Access to Digital Devices

Regarding access to digital devices within the context of digital poverty, it was found that all informants owned mobile phones, but only one had access to a laptop, which was borrowed from a neighbor. This is consistent with data from the Bali Provincial Statistics Office (BPS) regarding the Percentage of the Population Aged 5 and Over Accessing Information and Communication Technology (ICT) in 2023, which shows that the number of people using mobile phones is higher than those using computers. According to BPS Bali, 83.98% of Bali's population uses mobile phones, while 15.69% use computers (Bali, 2023). Ownership of such devices is an important indicator of the digital divide, where teenagers who only have access to mobile phones are limited in their ability to engage in more complex activities, which are often easier on laptops, such as

computer-based educational tasks. The limited ownership of digital devices such as computers or laptops clearly impacts productivity. A case related to the impact of ICT on productivity is illustrated by the increasing productivity gap between the European Union (EU) and the United States (US), largely driven by three factors, all of which are directly or indirectly related to ICT advancements (Biagi, 2013).

This digital gap, causing a productivity divide, is attributed to several factors, one of which is income. In Poverty and Digital Divide: A Study in Urban Poor Neighborhoods, it is explained that income plays a role in the diffusion of technology, reflecting consumer budget constraints in purchasing new technology (Mulyaningsih et al., 2020). Tetta Riyani Valentia added that the digital divide is also influenced by geographic location and socio-demographic factors (Valentia, 2023).

Based on the informants, most teenagers are in the medium level of digital poverty, as they have limited access to technology but are still digitally connected through mobile devices. Most rely on neighbors' Wi-Fi or mobile data and rarely use free public Wi-Fi provided by the government. According to the APJII 2023 survey, 77.31% of respondents use mobile data to access the internet, while only 20.76% use home Wi-Fi (Indonesia, 2023). The most common challenge was not the ability to purchase data plans but the instability of the network. This indicates limitations in consistent and independent connectivity, leading to medium-level digital poverty. Relying on neighbors' Wi-Fi shows dependence on others, while mobile data, though more flexible, is often more expensive and limited in terms of data quota. Informants with their own Wi-Fi were in a better position, closer to low digital poverty.

Digital Skills

Digital skills are closely related to a person's digital literacy. Based on interview data, all informants were able to use digital technology for everyday purposes such as education, job searching, or running online businesses. This shows that, in terms of digital skills, these teenagers are at a low level of digital poverty since they possess basic abilities to use technology productively. Digital literacy has a positive impact on online opportunities, enabling teenagers to better utilize new technologies. However, literacy does not significantly reduce online risks. In fact, more online opportunities may increase exposure to risks such as misinformation, privacy issues, and cyber threats (Luthfia, Wibowo, Widyakusumastuti, & Angeline, 2021).

Productive Use

Productive use in the context of digital poverty refers to how individuals effectively use digital technology for activities that generate value or have a positive impact on their lives, regardless of any access limitations they may face. This includes various activities with educational, economic, or social value. Spires and Bartlett in Elspeth McKay categorize intellectual processes related to the use of digital technology and media into three categories: finding and consuming digital content, creating or producing digital content, and distributing digital content (McKay, 2019).

In terms of using technology for productivity, most informants used mobile phones for education and information searching, with only one informant using it for an online business or to increase economic productivity. In the study Analysis of Digital Literacy in Social Media Usage Among Teenagers in Payung Village, digital literacy was used for communication, information seeking, and self-expression (Nawaf, Azura, Gultom, Afriansyah, & Putra, 2023). This indicates that productive use has been applied for education and social interaction. Catur Nugroho and Kharisma Nasionalita's study on the Digital Literacy Index of Indonesian Teenagers found that most teenagers use digital technology for entertainment and education. For instance, 42.2% of teenagers in Bandung used digital technology for entertainment, and 33.4% for social media, while in Surabaya, 32% used it for entertainment and 28% for school purposes, and in Denpasar, 33% for social media and 26% for education (Nugroho & Nasionalita, 2020).

Comparing these findings with Nugroho's research, it can be concluded that teenagers in Denpasar are mostly using digital technology for educational purposes. Upon further analysis, limited ownership of digital devices might be one factor contributing to this, alongside other factors hindering teenage productivity. Greater productivity may be restricted by limited access to devices (such as laptops) and stable internet. Mobile phones tend to limit the scope of tasks compared to more advanced devices. Therefore, in terms of productivity, teenagers are at a medium level of digital poverty.

The digital poverty level refers to the degree to which individuals or groups experience limitations in access, skills, and the utilization of digital technology. This level indicates how severely the digital divide impacts individuals based on three key components: access to technology devices, internet connectivity, and digital literacy.

Tabel: The Resulf of Level of Digital Poverty

No	Indicator	Degree of Digital Poverty	Level of Digital Poverty
1	Access to Digital Devices	Low Digital Poverty	**Wealthy Digital Poverty**
2	Digital Skills	Low Digital Poverty	
3	Penggunaan yang Produktif	Medium Digital Poverty	

Referring to the table above, it is evident that access to digital devices falls under low digital poverty. This is because most of the informants stated they receive substantial support from their environment regarding digital access. This is evident in their use of neighbors' Wi-Fi and support from family or friends in

providing devices like laptops or internet access. This environmental support is crucial, especially for those who do not have independent access to digital resources. In the case of Informant 1, for instance, neighbor-provided Wi-Fi helps maintain connectivity and access to important information despite the limitations in device ownership. A supportive environment not only aids in device and internet access but also fosters better digital literacy. Observing the positive interaction between individuals shows that social capital functions well. Simply put, social capital can be defined as the connections linking individuals and groups, which have a positive impact on both parties (Satria, 2020).

The utilization of social capital becomes crucial in alleviating poverty, as strong social ties can help provide access to resources that individuals do not possess directly. Social capital enables underprivileged individuals—in this study, teenagers with limited access to digital technology—to leverage these networks for assistance. Research on Social Capital and Poverty by Ayu Diah Amalia clarifies that social capital helps reduce poverty through collective action aimed at improving living standards, including providing social guarantees to disadvantaged individuals (Amalia, 2015).

Regarding digital skills, Denpasar's youth are at a low level of digital poverty. The informants explained that they were already capable of effectively using technology for educational needs, seeking job information, or even starting small businesses like selling mobile phone credits online. This demonstrates that supportive social capital whether from family, friends, or the surrounding community provides opportunities for productivity despite technological limitations. However, reliance on external support such as a neighbor's Wi-Fi may pose risks to digital independence in the future. The current digital access provided is only temporary, so without steps toward achieving digital independence such as device ownership, stable internet access, and adequate digital literacy individuals may face difficulties when external support is no longer available.

All informants used their digital access and skills for educational purposes, one form of productive use. However, this utilization has not yet demonstrated a significant shift towards more complex and broader uses, such as digital economy participation, political engagement, or technology-based entrepreneurship, resulting in a moderate level of digital poverty. Moderate digital poverty can be seen as a transitional phase where individuals or groups have sufficient access and digital skills but have not yet fully leveraged technology for more productive purposes.

E. CONCLUSION

Teenagers in Denpasar face challenges related to access, skills, and productive use of digital technology, which are dimensions of digital poverty. Although most informants possess adequate digital skills and are capable of using technology for educational needs, job searches, and small business ventures, they still rely heavily on social capital in the form of support from family, friends, and the community for access to devices and the internet. This reliance reflects a gap in digital independence, where many teenagers lack independent access to devices such as laptops or stable internet connections. This impacts their productivity, as

the lack of independent access to devices and the internet can limit their potential to engage in more complex or productive digital activities. Therefore, while social capital may serve as a temporary buffer to alleviate digital poverty, steps toward achieving digital independence are essential for teenagers to grow independently and sustainably in an ever-evolving digital era.

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