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The Impact of Technology Access Inequality and Digital Skill Disparities on Social Integration and Life Satisfaction in Indonesia

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ABSTRACT

This study investigates the impact of technology access inequality and the digital skills gap on social integration and life satisfaction in Indonesia. Utilizing a quantitative approach, data were collected from 230 respondents using a structured questionnaire. The results were analyzed using Structural Equation Modeling-Partial Least Squares (SEM-PLS 3) to evaluate the relationships between variables. Findings indicate that both technology access inequality and digital skill disparities significantly influence social integration, which in turn affects life satisfaction. Notably, technology access inequality has the strongest direct effect on life satisfaction. This research underscores the necessity for targeted interventions to improve technology access and digital skills, which can enhance social cohesion and overall well-being in Indonesia.

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1. INTRODUCTION

In the digital age, technology plays a critical role in shaping social interactions, economic opportunities, and overall quality of life. Access to technology and the skills needed to use digital tools effectively are essential for everyone to fully participate in modern society. Indonesia's digital divide has a significant impact on social integration and life satisfaction, characterised by gaps in access to technology and digital skills that affect social connections and well-being. Digital economic innovation is needed to reduce regional disparities, create jobs and accelerate economic growth [1]. Policy recommendations include investing in digital infrastructure and subsidising access for low-income households to reduce urban and rural disparities and promote social equity [2]. The gender gap in digital literacy, especially among older generations, is due to differences in access to mobile phones, education and income [3]. Improving digital literacy in the education sector is crucial to creating an inclusive digital environment [4]. In addition, the COVID-19 pandemic highlighted the importance of digital capabilities in public services, but challenges such as lack of infrastructure and coordination still need to be overcome for successful digital integration [5].

The digital divide in Indonesia, especially between urban and rural areas, poses a major challenge in ensuring equitable access to technology, affecting education, employment and economic opportunities. While urban areas enjoy more advanced technological infrastructure, rural areas are left behind due to limited connectivity and digital resources, compounded by a lack of digital skills. Government initiatives such as the Palapa Ring project seek to improve connectivity, but accessibility challenges remain [6]. This digital divide is influenced by factors such as GDP per capita and the proportion of formal labour [7]. Its impact is felt in sectors such as food security, where technology can improve agricultural productivity and rural household welfare [8]. Digital economic innovation is seen as a solution to reduce regional economic disparities and create employment opportunities [1]. To bridge the digital skills gap, the government launched a training programme to improve the digital competencies of the population, especially in the agricultural sector, which can support productivity and economic opportunities in rural areas [9].

Indonesia's digital skills gap has a significant impact on individuals' ability to utilise technology, which affects their access to social and economic opportunities as well as social integration and life satisfaction. Digital skills are critical for economic growth, employability and social inclusion, as they enable access to education and resources for marginalised groups [10]. Digital literacy in adult education is also crucial for socio-economic mobility and inclusiveness [11]. However, the digital divide exacerbates social inequalities in education, employment and healthcare, mainly due to limited digital access and literacy [2]. Barriers such as socio-economic factors and lack of targeted interventions hinder digital inclusion for marginalised groups [12]. Strategies to improve digital literacy involve government support, partnerships with technology companies, and innovative models such as the South Pacific Digital Literacy Framework (SPDLF) that effectively narrow the skills gap [13]. Individuals with low digital skills struggle to connect with others and access essential services, reducing their sense of belonging and life satisfaction [14]. This study seeks to explore the relationship between technology access inequality, the digital skills gap, and their effects on social integration and life satisfaction in Indonesia.

2. LITERATURE REVIEW

2.1 *Technology Access Inequality*

Technology access inequality refers to the unequal distribution of technological infrastructure and resources among different populations, often based on geographical, economic, or social factors. In developing countries like Indonesia, the digital divide is particularly pronounced between urban and rural regions. Urban areas typically enjoy advanced digital infrastructure, such as high-speed internet, whereas rural regions lag in terms of connectivity and technological tools [15]. This disparity not only limits opportunities for individuals in rural areas to access digital resources but also reinforces existing socio-economic inequalities. Prior studies have shown that technology access inequality can hinder participation in critical areas such as education, employment, and healthcare, ultimately affecting social integration and life satisfaction [16]–[18]. In the Indonesian context, the government has launched several initiatives aimed at expanding internet access across the country, including the Palapa Ring project, which aims to bring high-speed broadband to remote regions [19]. However, despite these efforts, significant gaps remain in technology access, particularly in rural and underprivileged communities. This inequality creates a barrier to social mobility and limits individuals' ability to connect with larger social networks, which are increasingly mediated through digital platforms [15], [17], [19].

2.2 *The Digital Skills Gap*

In addition to unequal access to technology, disparities in digital skills are also critical in shaping social and economic outcomes. The digital skills gap refers to the differences in individuals' ability to effectively use digital tools and technologies, often resulting from varying levels of education, exposure to technology, and access to digital literacy programs [20], [21]. Digital skills are broadly categorized into basic, intermediate, and advanced levels. While basic digital literacy involves using digital devices and the internet for simple tasks, advanced skills include programming, data analysis, and the ability to adapt to rapidly evolving digital tools [22]. The digital skills gap can lead to exclusion from critical societal functions such as online learning, digital banking, and telemedicine, which are becoming increasingly important in modern economies. Studies have highlighted that individuals with lower digital skills are often left behind in the digital economy, resulting in limited career opportunities and lower income levels [11]. Furthermore, the digital skills gap is closely linked to social integration, as individuals lacking these skills may find it more challenging to engage in social interactions, both online and offline [23]. In the Indonesian context, digital literacy programs are often unevenly distributed, with rural populations and lower-income groups being less likely to have access to training opportunities.

2.3 Social Integration

Social integration refers to the process by which individuals become connected to and engaged with the larger society, involving various dimensions such as social interactions, civic participation, and the formation of social networks [24]. Previous research has established that social integration is crucial for individual well-being, as it provides a sense of belonging and support from the community [25], [26]. In the digital age, technology plays a significant role in facilitating social integration, as digital platforms enable individuals to maintain social relationships and participate in community activities [27]. However, technology access inequality and the digital skills gap can create barriers to social integration, particularly for individuals who are unable to fully utilize digital tools for social interaction [28]. Those who are digitally excluded may experience social isolation, which can lead to a lower sense of belonging and, consequently, reduced life satisfaction. In Indonesia, social integration is further complicated by the country's cultural and geographical diversity, which can amplify the challenges faced by individuals who lack access to digital resources [29].

2.4 Life Satisfaction

Life satisfaction refers to an individual’s overall assessment of their quality of life, based on personal expectations, social relationships, and the fulfillment of basic needs. It is a subjective measure of well-being, influenced by various factors such as income, education, health, and social connections. Numerous studies [30]–[32], have shown that technology can play a significant role in enhancing life satisfaction by providing access to information, enabling social interactions, and creating opportunities for personal and professional growth. However, the benefits of technology on life satisfaction are not uniformly distributed. Research indicates that individuals who face technology access inequality or lack digital skills may have lower life satisfaction, as they are unable to take full advantage of the opportunities provided by digital platforms [33]. In Indonesia, life satisfaction is closely linked to social integration, as individuals with strong social networks and a sense of belonging tend to report higher levels of well-being. This suggests that addressing both the digital divide and the digital skills gap could be crucial for improving life satisfaction in the country [34].

2.5 A Conceptual Framework

The relationship between technology access, digital skills, social integration, and life satisfaction can be understood through a framework linking these factors. Technology access and digital skills enable individuals to engage with digital platforms, participate in social activities, and build networks, fostering social integration. In turn, social integration enhances life satisfaction, as those with strong social ties report higher well-being. In Indonesia, addressing technology access inequality and the digital skills gap is essential for improving social integration and life satisfaction. This study explores how these factors influence social integration and life satisfaction using quantitative methods.

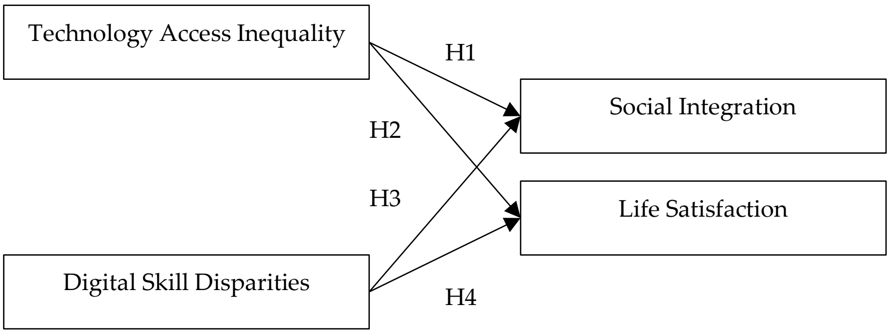

Figure 1. Conceptual and Hypothesis
Source: Literature Review, 2024

3. RESEARCH METHODS

3.1 *Research Design*

This study adopts a cross-sectional research design, focusing on the relationships between technology access inequality, the digital skills gap, social integration, and life satisfaction at a specific point in time. The research follows a quantitative approach, employing survey data to test hypotheses about these relationships. A Likert scale from 1 (strongly disagree) to 5 (strongly agree) was used to measure the variables, allowing for a structured and standardized collection of data. SEM-PLS 3 was chosen as the analytical method due to its ability to assess complex relationships between latent variables and its suitability for smaller sample sizes.

3.2 *Sample and Sampling Technique*

The sample for this study consisted of 230 respondents from various regions across Indonesia, ensuring representation from both urban and rural areas to capture a diverse range of technology access and digital skills. The sampling technique employed was purposive sampling, where individuals were selected based on their potential relevance to the study objectives. The key inclusion criteria were individuals over the age of 18 who had experience using digital technologies, ensuring that all participants had some level of interaction with technology. The sample size of 230 was deemed appropriate for SEM-PLS analysis, as it meets the minimum threshold for reliable and valid results. Prior studies suggest that a sample size of at least 200 is required for SEM-PLS to produce meaningful outcomes.

3.3 *Data Collection*

Data were collected through an online survey distributed via email, social media platforms, and messaging applications to reach a broad and geographically dispersed sample. The survey was user-friendly, with clear instructions to accommodate respondents from different educational backgrounds. It consisted of four sections: demographic information (age, gender, education, employment status, and location), technology access (assessing digital device usage, internet connectivity, and barriers to technology), digital skills (ranging from basic to advanced proficiency with digital tools), and social integration and life satisfaction (measuring social belonging and participation in community activities). The survey was open for one month, with reminders sent to boost responses. Of the 250 responses received, 230 were usable after excluding incomplete or inconsistent submissions.

3.4 *Data Analysis*

The data were analyzed using Structural Equation Modeling-Partial Least Squares (SEM-PLS 3), a statistical technique ideal for assessing complex relationships between latent variables, especially with smaller sample sizes and non-normally distributed data. SEM-PLS allows for the simultaneous analysis of multiple dependent and independent variables, making it suitable for this study's objective of exploring the relationships between technology access inequality, the digital skills gap, social integration, and life satisfaction. The analysis involved three steps: first, the measurement model was evaluated for reliability and validity using composite reliability, Cronbach's alpha, and average variance extracted (AVE), with low-loading items (below 0.7) removed to improve model fit. Next, the structural model was assessed to determine the strength and significance of relationships, calculating path coefficients to explore the direct effects of technology access inequality and the digital skills gap on social integration and life satisfaction, as well as the indirect effects of social integration on life satisfaction. Finally, hypothesis testing was conducted using bootstrapping with 5,000 samples, generating p-values and t-statistics to determine the significance of the hypothesized relationships.

4. RESULTS AND DISCUSSION

4.1 *Results*

a. Demographic Characteristics of the Sample

The demographic characteristics of the 230 respondents in this study were diverse, encompassing gender, age, education level, employment status, geographic location, and internet access, providing a representative view of technology access inequality and the digital skills gap in Indonesia. The sample included 120 males (52.2%) and 110 females (47.8%), allowing for gender-based analysis of technology access and digital skills. In terms of age, 55.7% of respondents were between 18-35 years, reflecting a predominantly younger sample, which is relevant given their greater engagement with digital technology. Education-wise, 40% held a bachelor's degree, while 25.7% had a high school diploma or equivalent, highlighting the influence of education on digital proficiency. Regarding employment, 65.2% were employed, 21.7% were students, and 13.1% were either unemployed or retired, underscoring the role of employment in technology access. The sample was geographically split, with 58.3% from urban areas and 41.7% from rural regions, facilitating a comparative analysis of access inequality. Finally, internet access varied, with 75% reporting consistent high-speed access, 15% with low-speed connections, and 10% having limited or no access, emphasizing the disparities in technology access.

b. Measurement Model Evaluation

The measurement model was evaluated to ensure reliability, convergent validity, and the absence of multicollinearity issues. This section discusses the indicators for each latent variable, including the Cronbach's Alpha, Composite

Reliability (CR), Average Variance Extracted (AVE), factor loadings (LF), and Variance Inflation Factor (VIF). These metrics confirm the consistency, validity, and robustness of the model.

Table 1. Measurement Model

Variable	Indicator and Code	LF	VIF
Technology Access Inequality	Cronbach's Alpha = 0.922, Composite Reliability = 0.942, AVE = 0.764.		
	TAI.1 Digital Device Ownership	0.869	1.772
	TAI.2 Affordability of Technology	0.858	2.401
	TAI.3 Geographical Disparities	0.781	2.222
	TAI.4 Access to Online Services	0.808	2.361
	TAI.5 Cybersecurity and Privacy Awareness	0.833	2.222
Digital Skill Disparities	Cronbach's Alpha = 0.926, Composite Reliability = 0.940, AVE = 0.661.		
	DSD.1 Educational Attainment and Digital Skills	0.811	2.873
	DSD.2 Employment-Related Digital Skills	0.776	2.260
	DSD.3 Generational Digital Skill Gaps	0.843	2.085
	DSD.4 Socioeconomic Status and Digital Skills	0.823	2.920
	DSD.5 Gender Gaps in Digital Skills	0.758	1.950
	DSD.6 Ethnic and Cultural Disparities in Digital Skills	0.872	1.333
	DSD.7 Digital Skills for Social Inclusion	0.837	1.614
	DSD.8 Policy and Institutional Support for Digital Skills	0.777	2.591
Social Integration	Cronbach's Alpha = 0.871, Composite Reliability = 0.912, AVE = 0.721.		
	SI.1 Social Networks and Relationships	0.810	2.372
	SI.2 Economic Participation	0.834	1.283
	SI.3 Civic and Political Engagement	0.823	2.928
	SI.4 Access to Education	0.802	2.109
	SI.5 Health and Well-being	0.785	2.420
	SI.6 Legal and Social Protections	0.818	2.533
Life Satisfaction	Cronbach's Alpha = 0.918, Composite Reliability = 0.936, AVE = 0.711.		
	LS.1 Purpose and Meaning	0.905	1.759
	LS.2 Autonomy and Freedom	0.892	2.394
	LS.3 Environmental Satisfaction	0.766	1.595
	LS.4 Leisure and Recreation	0.851	2.193

Source: Data processing results (2024)

The analysis demonstrated strong reliability and validity for all constructs. Technology Access Inequality (Cronbach's Alpha = 0.922, Composite Reliability = 0.942, AVE = 0.764) and its five indicators, including Digital Device Ownership (0.869) and Cybersecurity Awareness (0.833), showed excellent consistency. Digital Skill Disparities (Cronbach's Alpha = 0.926, Composite Reliability = 0.940, AVE = 0.661) included eight indicators like Educational Attainment (0.811) and Policy Support (0.777), confirming a robust model. Social Integration (Cronbach's Alpha = 0.871, Composite Reliability = 0.912, AVE = 0.721) and Life Satisfaction (Cronbach's Alpha = 0.918, Composite Reliability = 0.936, AVE = 0.711) also met all necessary thresholds, ensuring a solid foundation for further analysis.

Variance Inflation Factor (VIF) is used to detect multicollinearity in structural equation modeling, which can affect the accuracy of coefficients. A VIF above 5 indicates serious multicollinearity, while values below 3 are generally acceptable. In this study, all VIF values were below 3, indicating no significant multicollinearity issues. The next section provides details on the VIF values for each relationship in the model.

Table 2. Internal VIF

Variable	VIF
Digital Skill Disparities → Life Satisfaction	1.283
Digital Skill Disparities → Social Integration	2.367
Technology Access Inequality → Life Satisfaction	2.533
Technology Access Inequality → Social Integration	1.492

Source: Data processing results (2024)

The inner VIF values across all paths are below 3, indicating no multicollinearity issues in the model. Low VIF values, such as for digital skills disparities and life satisfaction (1.283) and technology access inequality and social integration (1.492), show minimal overlap. Although higher for other paths, such as digital skills disparities and social integration (2.367), they remain within acceptable limits. This confirms that the model effectively distinguishes the effects of technology access inequality and the digital skills gap. Discriminant validity, assessed through the HTMT, shows values below 0.85 indicate good validity, with values up to 0.90 still acceptable.

Table 3. Discriminant Validity

Variable	Digital Skill Disparities	Life Satisfaction	Social Integration	Technology Access Inequality
Digital Skill Disparities				
Life Satisfaction	0.722			
Social Integration	0.899	0.842		
Technology Access Inequality	0.617	0.685	0.731	

Source: Data processing results (2024)

The HTMT analysis confirms that the constructs in this study generally maintain strong discriminant validity, with HTMT values below 0.85 for most relationships. While the relationship between Digital Skill Disparities and Social Integration has an HTMT value close to 0.90, indicating a strong connection, it still remains distinct enough to be considered as separate constructs.

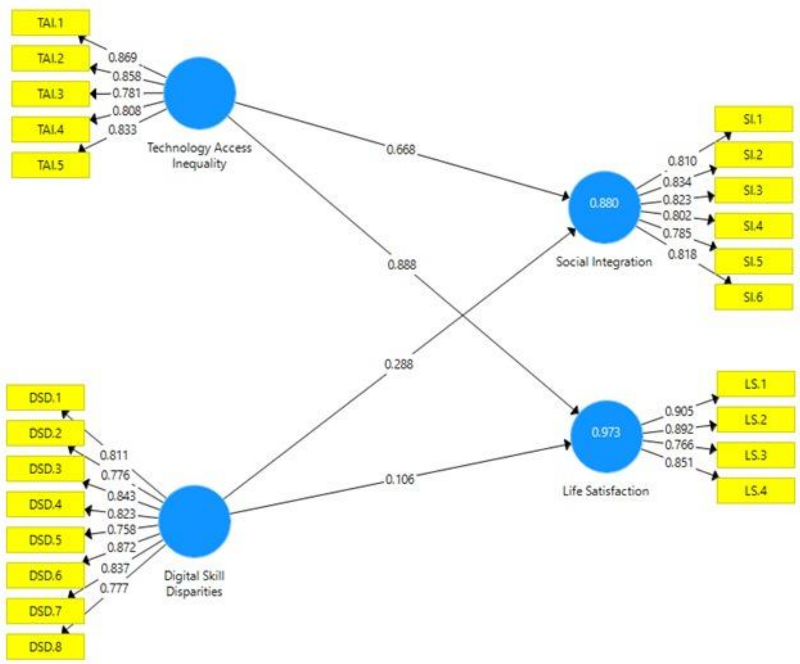

Figure 2. Internal Assessment Model

c. Model Fit Evaluation

Evaluating model fit is crucial to determine how well the structural model represents the data, using indices such as the Standardized Root Mean Square Residual (SRMR), Normed Fit Index (NFI), and Chi-Square (χ^2). The SRMR, at 0.056, is well below the acceptable threshold of 0.08, indicating a good fit. The NFI, at 0.918, exceeds the 0.90 threshold, confirming strong alignment between the model and the data. Although the Chi-Square value ($\chi^2 = 382.34$, df = 204, $p < 0.01$) suggests a lack of perfect fit, this result should be cautiously interpreted due to sample size sensitivity. The Root Mean Square Error of Approximation (RMSEA), at 0.059, and the Comparative Fit Index (CFI), at 0.927, are both within acceptable ranges, further supporting the validity and robustness of the proposed model.

The R-Square (R^2) and Adjusted R-Square values are key indicators of the model's explanatory power, showing how much variance in the dependent variables is explained by the independent variables. In this study, R^2 and Adjusted R^2 values are reported for Life Satisfaction and Social Integration. For Life Satisfaction, the R^2 is 0.573, indicating that 57.3% of its variance is explained by Technology Access Inequality, Digital Skill Disparities, and Social Integration. The Adjusted R^2 is 0.572, showing a minimal adjustment for predictors, reflecting stable predictive accuracy. Similarly, Social Integration has an R^2 of 0.688, meaning 68.8% of its variance is explained by the same factors, with an Adjusted R^2 of 0.687, again showing minimal overfitting. These values suggest strong explanatory power, particularly for Social Integration, while leaving some unexplained variance, implying other factors, such as personal or socio-economic influences, may also play a role.

The Blindfolding Test evaluates a model's predictive relevance using Q^2 values from the Stone-Geisser criterion. A Q^2 value above 0 indicates predictive relevance, while values near or below 0 suggest limited predictive power. In this study, the test was applied to the endogenous variables—Life Satisfaction and Social Integration—excluding predictor variables like Digital Skill Disparities and Technology Access Inequality. The Q^2 values are calculated as $Q^2 = 1 - (SSE/SSO)$, where SSO is the sum of squared observations, and SSE is the sum of squared errors.

Table 4. Blindfolding Test Result

Variable	SSO	SSE	Q^2 (=1-SSE/SSO)
Digital Skill Disparities	920.000	920.000	
Life Satisfaction	460.000	138.118	0.700
Social Integration	690.000	297.530	0.569
Technology Access Inequality	575.000	575.000	

Source: Data Analysis Processing (2024)

The blindfolding test results confirm the model's predictive relevance for the endogenous variables Life Satisfaction and Social Integration, with Q^2 values well above zero. Life Satisfaction shows a high Q^2 of 0.700, indicating excellent predictive power, driven by the relationships between Digital Skill Disparities, Technology Access Inequality, and Social Integration. Social Integration has a Q^2 of 0.569, reflecting solid predictive relevance, though slightly lower than that for life satisfaction, still highlighting the significant impact of digital disparities on social integration outcomes.

d. Hypothesis Testing Results

The hypothesis testing results reveal the significance and strength of the relationships between the constructs using key metrics such as Original Sample (O), Sample Mean (M), Standard Deviation (STDEV), T Statistics, and P Values. These metrics assess whether the hypothesized relationships are statistically significant and indicate the direction and magnitude of the effects. The results focus on the relationships between Digital Skill Disparities, Technology Access Inequality, Social Integration, and Life Satisfaction.

Table 5. Bootstrapping Test

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Digital Skill Disparities -> Life Satisfaction	0.306	0.306	0.051	3.071	0.002
Digital Skill Disparities -> Social Integration	0.488	0.491	0.111	5.588	0.000
Technology Access Inequality -> Life Satisfaction	0.888	0.889	0.047	18.914	0.000
Technology Access Inequality -> Social Integration	0.668	0.665	0.109	6.114	0.000

Source: Data processing results (2024)

The hypothesis testing results show significant positive relationships between Digital Skill Disparities, Technology Access Inequality, Life Satisfaction, and Social Integration. For Hypothesis 1, Digital Skill Disparities positively affect Life Satisfaction with a path coefficient of 0.306, T-statistic of 3.071, and P-value of 0.002, indicating that individuals with better digital skills experience higher life satisfaction. Hypothesis 2 reveals a strong positive relationship between Digital Skill Disparities and Social Integration, with a path coefficient of 0.488, T-statistic of 5.588, and P-value of 0.000, suggesting that better digital skills enhance social integration. Hypothesis 3 shows that Technology Access Inequality strongly influences Life Satisfaction, with a path coefficient of 0.888, T-statistic of 18.914, and P-value of 0.000, emphasizing the role of technology in improving life quality. Lastly, Hypothesis 4 confirms that Technology Access Inequality positively impacts Social Integration, with a path coefficient of 0.668, T-statistic of 6.114, and P-value of 0.000, highlighting that greater access to technology fosters social inclusion.

4.2 *Discussion*

The findings show a significant positive relationship between Digital Skill Disparities and Life Satisfaction ($\beta = 0.306$, $p = 0.002$), indicating that improved digital skills lead to higher life satisfaction. This aligns with prior research emphasizing the role of digital literacy in enhancing well-being and quality of life [35]–[37]. In a digital world, individuals with better skills can access more information, resources, and services, boosting their fulfillment. These results highlight the importance of targeted digital literacy programs, particularly in areas with digital skill gaps, to create more personal and professional opportunities, foster community engagement, and ultimately improve overall well-being.

The study found a strong positive relationship between Digital Skill Disparities and Social Integration ($\beta = 0.488$, $p = 0.000$), indicating that individuals with better digital skills are more socially integrated. Effective use of digital tools facilitates social connections, community engagement, and participation in civic activities, supporting previous research on the role of digital literacy in social inclusion. This has significant implications for policymakers and educators, as promoting digital literacy, especially in underprivileged communities, can enhance social integration and bridge socio-economic gaps. Additionally, since social integration is linked to well-being, improving digital skills can positively impact life satisfaction [38]–[40].

The study reveals a highly significant relationship between Technology Access Inequality and Life Satisfaction ($\beta = 0.888$, $p = 0.000$), showing that individuals with better access to technology report higher life satisfaction. This supports existing research on the critical role of technology access in enhancing quality of life by providing access to essential services, information, and social networks [36], [41], [42]. The findings emphasize the need for policies to reduce technology access inequality, especially in rural and underserved areas. Investments in infrastructure and digital devices are essential to ensure widespread participation in the digital economy, ultimately promoting greater life satisfaction and societal well-being.

The study found a significant relationship between Technology Access Inequality and Social Integration ($\beta = 0.668$, $p = 0.000$), indicating that access to technology plays a crucial role in fostering social connections and engagement. Individuals with better technology access are more likely to participate in community activities and build social networks, enhancing their sense of belonging [15], [39], [43]. These findings highlight that technology access has broader implications for community cohesion and social capital. Addressing disparities in technology access can improve social integration, which is vital for creating resilient communities, emphasizing the need for policies that expand digital access and engagement.

4.3 *Implications for Policy and Practice*

The findings of this study have significant implications for policy and practice in Indonesia. Given the strong relationships established between technology access, digital skills, social integration, and life satisfaction, it is clear that efforts to bridge the digital divide must be a priority. Policymakers should consider the following strategies:

1. Expanding internet access and improving connectivity in rural and underserved areas can help reduce technology access inequalities.
2. Implementing community-based digital literacy initiatives can empower individuals with the skills needed to navigate the digital landscape, enhancing their social integration and overall life satisfaction.
3. Programs aimed at providing affordable technology and training to marginalized populations can help ensure that everyone benefits from digital advancements.
4. Establishing metrics to assess the impact of technology access and digital skills initiatives on social integration and life satisfaction will help refine policies and practices to better meet community needs.

5. CONCLUSION

The findings of this study underscore the crucial relationship between technology access inequality, digital skills disparities, social integration, and life satisfaction in Indonesia. Individuals with better access to technology and higher digital skills experience greater social integration, leading to higher life satisfaction. The strong direct impact of technology access on life satisfaction highlights the need to address disparities in digital resources. Policymakers should focus on improving digital infrastructure in underserved areas and promoting digital literacy programs to empower individuals and enhance participation in the digital economy. Bridging the digital divide can foster social cohesion, improve well-being, and ensure all citizens benefit from technological opportunities. This research adds valuable insights to the literature on the digital divide and calls for future studies to explore additional factors and long-term impacts of digital literacy initiatives.

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