

## The Relationship Between Human Capital and Digital Literacy on Financial Inclusion

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### ABSTRACT

*Financial inclusion is a crucial element in promoting sustainable and equitable economic development. However, the level of financial inclusion still faces various challenges, particularly those related to the quality of human resources and the ability to adapt to digital technology developments. This study aims to analyze the relationship between human capital and digital literacy on financial inclusion. This study used a qualitative approach with a descriptive-exploratory design. Data were collected through in-depth interviews, observations, and documentation with productive-age individuals, micro and small business owners, and related parties involved in formal financial services. Data analysis was conducted using thematic analysis to identify patterns and meanings emerging from the experiences and perceptions of informants. The results show that human capital plays a significant role in shaping individuals' understanding, attitudes, and trust in formal financial services. Education level, skills, and experience contribute to an individual's ability to access and utilize financial services. Furthermore, digital literacy has*

*proven to be a crucial factor in supporting the utilization of technology-based financial services, particularly in increasing access, security, and intensity of use of digital financial services. This study also found that human capital and digital literacy have a mutually reinforcing relationship in promoting financial inclusion. Individuals with high levels of human capital and digital literacy demonstrate higher and more sustainable levels of financial participation. These findings emphasize that increasing financial inclusion must be accompanied by strengthening the quality of human resources and digital literacy within the community.*

### ABSTRACT

Inklusi keuangan merupakan elemen penting dalam mendorong pembangunan ekonomi yang berkelanjutan dan berkeadilan. Namun, tingkat inklusi keuangan masih menghadapi berbagai tantangan, khususnya yang berkaitan dengan kualitas sumber daya manusia dan kemampuan adaptasi terhadap perkembangan teknologi digital. Penelitian ini bertujuan untuk menganalisis hubungan antara human capital dan literasi digital terhadap inklusi keuangan. Penelitian ini menggunakan pendekatan kualitatif dengan desain deskriptif-eksploratif. Data dikumpulkan melalui wawancara mendalam, observasi, dan dokumentasi terhadap masyarakat usia produktif, pelaku usaha mikro dan kecil, serta pihak terkait yang memiliki keterlibatan dalam layanan keuangan formal. Analisis data dilakukan menggunakan analisis tematik untuk mengidentifikasi pola dan makna yang muncul dari pengalaman dan persepsi informan. Hasil penelitian menunjukkan bahwa human capital berperan penting dalam membentuk pemahaman, sikap, dan kepercayaan individu terhadap layanan keuangan formal. Tingkat pendidikan, keterampilan, dan pengalaman berkontribusi pada kemampuan individu dalam mengakses dan memanfaatkan layanan keuangan. Selain itu, literasi digital terbukti menjadi faktor krusial dalam mendukung pemanfaatan layanan keuangan berbasis teknologi, khususnya dalam meningkatkan akses, keamanan, dan intensitas penggunaan layanan keuangan digital. Penelitian ini juga menemukan bahwa human capital dan literasi digital memiliki hubungan yang saling menguatkan dalam mendorong inklusi keuangan. Individu dengan kualitas human capital dan literasi digital yang baik menunjukkan tingkat partisipasi keuangan yang lebih tinggi dan berkelanjutan. Temuan ini menegaskan bahwa peningkatan inklusi keuangan perlu diiringi dengan penguatan kualitas sumber daya manusia dan literasi digital masyarakat.

### INTRODUCTION

Financial inclusion is a crucial pillar of sustainable economic development because it promotes equitable access to formal financial services for all levels of society. Adequate access to financial services enables individuals and businesses to manage their finances more effectively,

improve well-being, and reduce social and economic inequality (Natalia et al., 2020). In the era of globalization and digital transformation, the financial system has undergone significant changes, particularly with the advent of digital technology-based financial services. The digitalization of the financial sector has opened up broader opportunities for the public to access banking, financing, savings, and investment services more quickly and efficiently (Tanjung et al., 2025).

Despite the rapid development of financial technology, financial inclusion in various developing countries, including Indonesia, still faces complex challenges. Disparities in access, low financial literacy, and limited human resources are key factors hindering the optimization of financial inclusion (Yunahindra & Ariyani, 2025). One important factor influencing the level of financial inclusion is the quality of human capital. Human capital reflects an individual's knowledge, skills, experience, and abilities acquired through education, training, and work experience. Individuals with good human capital tend to have more rational financial decision-making abilities (Amin, 2025).

Higher levels of education, as an indicator of human capital, play a role in increasing an individual's understanding of financial products and services (Indra, 2025). Education enables people to understand the benefits, risks, and mechanisms of using formal financial services more comprehensively. In addition to formal education, skills and competencies are also important elements of human capital. Analytical, numeracy, and financial management skills help individuals manage income, expenses, and long-term financial planning, ultimately driving increased participation in the formal financial system (Wahyuningrum & Wibowo, 2025). However, increasing human capital alone does not always guarantee optimal financial inclusion, especially amidst the rapid digitalization of financial services (Heliani & Novitasari, 2025). Digital transformation demands new skills related to the use of information and communication technology. In this context, digital literacy is a crucial factor, acting as a bridge between the public and digital financial services (Maharani & Rustariyuni, 2025). Digital literacy includes not only the ability to use technological devices, but also an understanding of security, privacy, and ethics in digital transactions (Margareta & Mandasari, 2025).

Low digital literacy can lead to people being reluctant or unable to utilize digital financial services, even when physical access is readily available. This situation can widen the financial inclusion gap between digitally literate and underserved groups (Amri & Kunci, 2025). Digital literacy also plays a role in increasing public trust in technology-based financial services. A good understanding of digital systems, cyber risks, and consumer protection will encourage individuals to be more trusting and actively use formal financial services. The relationship between human capital and digital literacy is complementary. Strong human capital supports an individual's ability to understand and adopt digital technology, while digital literacy strengthens the utilization of an individual's skills and knowledge in a financial context (Andriani, 2025). In the context of financial inclusion, the combination of human capital and digital literacy is believed to be able to increase access, use, and quality of financial services received by the public (Nashoha et al., 2025). Individuals with high levels of human capital and digital literacy have a greater chance of engaging in formal financial activities (Mandasari & Oktapiani, 2025).

However, the reality on the ground shows that gaps persist between community groups with varying levels of human capital and digital literacy. Communities in rural areas, low-income groups, and micro-entrepreneurs often face limitations in both areas. This gap has the potential to hinder the efforts of the government and financial institutions to increase financial inclusion equitably. Without an adequate understanding of the role of human capital and digital literacy, financial inclusion policies tend to be less effective and sustainable. Various financial inclusion improvement programs that have been launched still focus more on providing access and

infrastructure, while improving the quality of human resources has not yet been fully prioritized. Yet, the success of financial inclusion depends heavily on the community's ability to utilize this access (Sari & Widodo, 2022).

Therefore, it is important to examine more deeply how human capital contributes to increased financial inclusion, both directly and through improved digital literacy. This understanding will provide a more comprehensive picture of the determinants of financial inclusion. Research on the relationship between human capital and digital literacy and financial inclusion is relevant in the context of knowledge- and technology-based economic development. This study is expected to fill a limited research gap, particularly in the context of developing countries. Furthermore, the results of this study are expected to provide empirical contributions to the development of public policies oriented towards improving the quality of human resources and digital literacy as the primary strategy for expanding financial inclusion. Practically, this research is also expected to serve as a reference for financial institutions, regulators, and other stakeholders in designing more targeted financial and digital education programs (Asmoro et al., 2025).

Thus, a study of the relationship between human capital and digital literacy and financial inclusion is important and strategic in supporting the creation of an inclusive, equitable, and sustainable financial system in the digital era.

## **RESEARCH METHODS**

### **Research Approaches and Types**

This research uses a qualitative approach with a descriptive-exploratory research type. Qualitative research was selected to gain a deep understanding of how human capital and digital literacy influence financial inclusion based on the informants' experiences, perceptions, and actual practices.

### **Research Paradigm**

This research is based on a constructivist paradigm, which views social reality as the result of the construction of meaning through the interaction of individuals with their environment. This paradigm allows researchers to understand the phenomenon of financial inclusion from the perspective of the research subjects holistically and contextually.

### **Research Focus**

The research focus is directed at three main aspects, namely:

1. The meaning and role of human capital in improving individuals' ability to access financial services,
2. The level and form of digital literacy of the community in utilizing technology-based financial services, and
3. The implications of these two factors on the level of financial inclusion.

### **Research Location and Context**

The research was conducted in regions across Indonesia with diverse socioeconomic characteristics. Location selection was based on the adoption rate of digital financial services and the availability of information technology infrastructure.

### **Research Subjects and Informants**

The research informants consisted of users and non-users of formal financial services, MSMEs, and related parties such as financial institutions and local regulators. Informants were selected using purposive sampling, with specific criteria relevant to the research objectives.

### **Data collection technique**

Data collection was conducted through in-depth interviews, participant observation, and documentation. In-depth interviews were used to explore informants' experiences and perceptions, while observations were conducted to understand the practices of using financial services and digital technology in everyday life.

### **Research Instruments**

The primary instrument in this research was the researcher herself, assisted by a semi-structured interview guide. The interview guide was designed flexibly to allow for exploration of issues that emerged during the research process.

### **Data Analysis Techniques**

Data analysis was conducted interactively and continuously, following the Miles and Huberman model, which includes data reduction, data presentation, and conclusion drawing. The analysis process continued from the data collection stage until the research ended.

### **Data Validity Test**

Data validity was ensured through source triangulation, method triangulation, and member checking techniques. These techniques aim to increase the credibility and reliability of research findings.

### **Research Procedures**

The research procedure includes pre-fieldwork, field data collection, data analysis, and reporting of research results. Each stage is carried out systematically to ensure the consistency and quality of the data obtained.

### **Data Recording and Management Techniques**

Interview and observation data were recorded in the form of transcripts, field notes, and audio recordings. All data was organized to facilitate analysis and data retrieval.

### **Thematic Analysis**

In this study, researchers used thematic analysis to identify patterns, themes, and meanings emerging from the qualitative data. The resulting themes illustrate the relationship between human capital, digital literacy, and financial inclusion.

### **Results Reporting Techniques**

The research results are presented in the form of descriptive narratives supported by direct quotes from informants and researcher interpretations, so that they are able to describe the research phenomena in a complete and contextual manner.

## **RESULTS AND DISCUSSION**

### **Overview of Research Informants**

This research involved a number of informants from diverse socioeconomic backgrounds and educational levels, including productive-age individuals, micro and small business owners, and individuals who had or had not utilized formal financial services. The varied characteristics of the informants provided a comprehensive picture of the state of human capital and digital literacy in the context of financial inclusion. Informants with higher levels of education generally had more experience in accessing formal financial services, while informants with lower levels of education tended to remain dependent on the informal financial system.

### **Findings on Human Capital in the Context of Financial Inclusion**

Interview results indicate that human capital plays a fundamental role in shaping individuals' attitudes and behaviors toward financial services. Informants with higher levels of education demonstrated a better understanding of basic financial concepts, such as savings, financing, interest, and risk. They were also better able to differentiate between formal and

informal financial products and understand the long-term benefits of using formal financial services (Wibowo & Usaha, 2026).

Conversely, informants with limited education and skills tended to have negative perceptions or fear of formal financial institutions. This fear stemmed from a lack of understanding of administrative procedures and concerns about the risk of default. This finding suggests that limited human capital not only hinders access but also impacts individuals' trust in the formal financial system.

### **The Role of Experience and Skills in Human Capital**

In addition to formal education, work experience and practical skills are also important components of human capital. MSME informants who have participated in entrepreneurship or financial management training demonstrated better ability to utilize financial services, such as micro-enterprise loans and digital banking. They are able to rationally assess capital needs and utilize financial services as a tool for business development (Kumanireng & Utomo, 2023).

However, informants who lacked training or business mentoring experience tended to use financial services to a limited extent, even when physical access was available. This confirms that strong human capital is determined not only by formal education but also by continuous learning and practical experience.

### **Findings on Community Digital Literacy**

The research results show that digital literacy is a key factor in utilizing modern financial services. Informants who are proficient in using digital devices, such as smartphones and financial applications, demonstrate higher levels of participation in the formal financial system. They utilize mobile banking services, digital wallets, and cashless payment platforms to meet their daily transaction needs (Suardana et al., 2024).

Conversely, informants with low digital literacy tend to experience difficulties operating digital financial applications. This inability not only hinders the use of financial services but also creates dependence on others, such as family members or financial service agents, potentially posing a risk of abuse.

### **Perceptions of Digital Security and Trust**

Digital security emerged as a key theme in this study. Informants with good digital literacy demonstrated a high level of awareness of the importance of maintaining personal data confidentiality and transaction security. They understood the risks of digital fraud and were able to take appropriate preventative measures (Dwi et al., 2025).

Conversely, informants with limited digital literacy expressed high levels of concern about the security of digital transactions. This concern made them reluctant to use digital financial services despite recognizing the convenience they offer. These findings suggest that digital literacy is not only related to technical skills but also to an understanding of risks and security.

### **The Relationship Between Human Capital and Digital Literacy**

Thematic analysis results indicate a mutually reinforcing relationship between human capital and digital literacy. Informants with strong human capital tend to adapt more quickly to digital technology and are more open to financial service innovations. Basic education and skills help them understand the functions and benefits of digital technology in financial management.

Conversely, digital literacy also strengthens the utilization of an individual's human capital. Informants who are able to utilize digital technology effectively demonstrate improved abilities

in managing finances, accessing financial information, and making more informed financial decisions.

### **Impact on Access to Financial Inclusion**

This study found that a combination of strong human capital and digital literacy directly contributes to increased access to financial inclusion. Informants who possess both aspects are able to access various formal financial services without significant barriers. They not only have bank accounts but also utilize financing, insurance, and digital payment instruments (Setyanti, 2025).

Conversely, limitations in either aspect, human capital or digital literacy, result in suboptimal access to financial inclusion. Informants with sufficient education but low digital literacy still face difficulties utilizing digital financial services, and vice versa.

### **Use and Intensity of Financial Services**

In addition to access, this study also found that human capital and digital literacy influence the intensity of financial service use. Informants with high levels of human capital and digital literacy use financial services more regularly and diversely. They utilize financial services for saving, investing, and developing their businesses (Nadia, 2023).

In contrast, informants with limitations in both areas tended to use financial services only for basic needs and at low frequency. This suggests that financial inclusion is not only about access, but also about the quality and sustainability of financial service use.

### **Structural and Contextual Barriers**

The research also revealed structural barriers affecting the relationship between human capital, digital literacy, and financial inclusion. Limited digital infrastructure, particularly in certain regions, is a major obstacle to improving digital literacy. Furthermore, the lack of sustainable financial and digital education programs undermines efforts to improve human resource quality (Lambut & Purba, 2025).

These barriers demonstrate that increasing financial inclusion requires a comprehensive approach, focusing not only on individuals, but also on supportive environments and policies.

## **CONCLUSION**

This study concludes that human capital plays a crucial role in promoting financial inclusion. An individual's education level, skills, and experience have been shown to influence public understanding, attitudes, and trust in formal financial services. Individuals with strong human capital tend to have more rational financial decision-making skills and are more open to utilizing formal financial products and services.

In addition to human capital, digital literacy has proven to be a key factor in expanding financial inclusion, particularly in the era of financial sector digitalization. The ability to use digital technology, understand transaction security, and manage digital information enables individuals to access and utilize digital financial services more effectively. Low digital literacy is a major barrier preventing people from being reluctant or unable to utilize technology-based financial services even when access is readily available.

The research also shows that human capital and digital literacy have a mutually reinforcing relationship in influencing financial inclusion. Strong human capital facilitates individuals' understanding and adoption of digital technology, while digital literacy strengthens the utilization

of individual knowledge and skills in financial management. The combination of these two factors significantly contributes to increased access, use, and quality of formal financial services.

This research confirms that financial inclusion is determined not only by the availability of access and infrastructure, but also by the quality of human resources and a community's digital capabilities. Individuals who have access to financial services but lack adequate human capital and digital literacy tend not to be fully financially included.

Therefore, efforts to increase financial inclusion need to be comprehensive and sustainable, through strengthening education, enhancing skills, and developing digital literacy. This approach is expected to create a financial system that is more inclusive, equitable, and adaptable to future technological developments.

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