Talent: Journal of Economics and Business
Volume 03 No 04 December 2025
E ISSN : 3031-6383

https://lenteranusa.id/

Explorating Digital Skills Readiness: The Role of Digital Literacy, Access to Digital Tools Resources, and Self-Efficacy

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Received: 18-10-2025 Revised : 23-11-2025, 04 -12-2025 Accepted : 05-12-2025

Abstract
This study discusses the influence of Digital Literacy Training and Access to Digital Tools and Resources on Digital Skills Readiness in the context of manufacturing companies in Bekasi Regency, by considering the mediating role of Self-Efficacy In Digital Tasks in digital tasks. In the ever-evolving digital era, digital skills readiness is a crucial issue for industry, especially in facing the industrial revolution 4.0. This study aims to explore the relationship between these two factors and digital skills readiness, which include technical, information, and collaboration skills. The method used is quantitative research with a sample of respondents working in the manufacturing sector. The results of the analysis show that Digital Literacy Training has a significant positive impact on Digital Skills Readiness, while Access to Digital Tools and Resources also contributes to improving employees' digital skills. However, the role of Self-Efficacy In Digital Tasks as a mediator shows insignificant results in this relationship. These findings emphasize the importance of investing in Digital Literacy Training to improve the digital skills of the workforce. From a practical perspective, this study provides clear guidance for HR managers and policymakers to prioritize structured training programs and equitable access to digital tools, while not overly relying on self-efficacy assumptions, in order to strengthen workforce preparedness. This study is expected to provide insight for companies and policy makers in designing effective digital skills development strategies, so that they can support innovation and competitiveness of the manufacturing industry in Indonesia.

Keywords: Digital Literacy Training, Access To Digital Tools And Resources, Digital Skills Readiness, Self–Efficacy In Digital Tasks, Manufacturing

Introduction

In the era of globalization that continues to grow rapidly, globalization has a strategic impact on the strategic environment. All organizations, including public, business, and social organizations, find it difficult to avoid globalization, and therefore there is competition in various fields. Every business must be ready to grow, able to adapt to change, and constantly innovate and be creative in order to compete and build an organization with a competitive advantage. (Nour Halisa et al., 2020)

Human resource management is a plan, activities that aim to acquire, develop, maintain, and use human resources to help the company to achieve the company's goals, in achieving the

company's goals it needs high-quality employees, for the success of the company depends on the excellence of human resources in carrying out their functions and responsibilities, humans can play an active role and always have an influence on each organizational activities, because humans are the determinants of the achievement of an organizational goal. (Sofiati, 2021)

Some of the important activities that support human resource management in a company include seen from the Digital Skills Readiness of employees, Digital Skills Readiness has become a crucial issue that affects various industrial sectors, including the manufacturing industry, thus the digital transformation that has occurred massively, the business landscape has undergone major changes. As a result, there is a new demand for a workforce that has strong digital capabilities. Manufacturing companies, which are an important part of the world economy, face major problems in adapting to new technologies and ensuring that their human resources have sufficient digital capabilities to face the industrial revolution 4.0. The manufacturing industry needs to adopt a more integrated approach in integrating digital technologies into their production processes, which requires a substantial increase in the digital skills of the workforce. This digital skills readiness reflects the ability of the workforce to adopt and utilize digital technology in increasing productivity and innovation. Kiss (2018)

The phenomenon shows Ready digital skills are essential for manufacturing companies to improve operational efficiency, product innovation, and global competitiveness. In an effort to improve Digital Skills Readiness, many manufacturing companies have implemented various strategies, including Digital Literacy Training and improving Access to Digital Tools and Resources. However, the effectiveness of this strategy is still a topic of debate among researchers and industry practitioners. Research conducted by shows that digital skills improvement can help companies in facing challenges in the digital era. In addition, digital transformation involving technologies such as the Internet of Things and analytics is also contributing to efficiency and productivity in the production process, which further emphasizes the importance of digital skills training for employees. Deswarta et al (2024)

The report on "The Future of Jobs" states that half of all workers will need significant upskilling (reskilling) by 2025. The report shows that 40% of core workers across all industries will need six months or less retraining. This information companies including the manufacturing sector, must give great priority to the development of their employees' digital skills. Despite the growing need for digital skills, many manufacturing companies are still lagging behind in terms of the digital readiness of their workforce Schwab Klaus (2020) . The study found that 57% of manufacturing executives have difficulty getting employees with the necessary digital skills, and that employee skills shortages are causing 60% of open manufacturing jobs to go unfilled. Demonstrates how important it is to improve digital capabilities in the manufacturing industry, which includes upskilling current employees and recruiting new employees. Deloitte (2021) . Many manufacturing companies have started using various strategies to address this digital skills shortage. Some of these strategies include Digital Literacy Training and increased Access to Digital Tools and Resources. Meanwhile, access to digital tools and resources refers to the availability and ability of employees to use digital technologies. Research shows that increased access to digital technology can significantly impact productivity and innovation in the

manufacturing sector, by providing employees with the skills necessary to adapt to rapid changes in the industry. Berries (2018)

Transforming digital technology into the operations of manufacturing companies is a big challenge. One of the important elements to consider is the readiness of employees' digital skills, also known as Digital Skills Readiness. Although a lot of research has been done on digital transformation in the manufacturing industry, there is still a significant research gap, or research gap, related to the digital skills readiness of employees. Several studies have explored the importance of digital skills in the context of Industry 4.0, however, few studies have specifically analyzed the level of digital skills readiness of employees in manufacturing companies and how it impacts the successful implementation of digital technologies. Not many studies address the need for better digital skills. A deep understanding of how manufacturing companies can effectively upskill and retain the digital skills of their employees is lacking. The context of developing countries is underrepresented in the current literature, while current research tends to center on developed countries. Further research is needed to expand our understanding of digital readiness capabilities in the context of manufacturing companies at different levels of economic development. Schröder (2017) Kiel et al (2017) (Sony, 2020)

Digital Skills Readiness refers to the level of readiness of an individual or organization in mastering and applying the digital skills necessary to participate effectively in the digital economy. Digital Skills Readiness is defined as the ability and skills used to take advantage of information and communication technology (ICT) opportunities to improve performance and productivity. This concept covers many things, from basic digital literacy to using advanced technologies such as artificial intelligence, big data analytics, and the Internet of Things. Digital skills include not only technical abilities in using digital devices and applications but also include information, communication, collaboration, creativity, critical thinking, and problem-solving skills in a digital context. Their research emphasizes the importance of developing comprehensive digital skills to prepare the workforce for the ever-evolving demands of the digital economy. Kusumawati & Saputri (2023) van Laar et al (2017)

Various studies have been conducted to explore the relationship between Digital Literacy Training, Access to Digital Tools and Resources, and Digital Skills Readiness. Some studies have shown a significant influence of both factors on improving employees' digital skills readiness, while other studies have found mixed results. It is important to analyze these findings in order to understand the dynamics of digital skills development in the manufacturing sector. Digital Literacy Training is the ability to choose and use digital technology anywhere and anytime, in a targeted way. Digital literacy is also linked to critical thinking about the opportunities and benefits of frequently used digital technologies such as social networks, and smartphone applications According to . (Rosalina et al., 2021)

A study conducted by 500 employees in various manufacturing companies in Southeast Asia found that Digital Literacy Training has a significant positive influence on Digital Skills Readiness. The study found that structured Digital Literacy Training can increase employees' digital skills by 30% within six months. In line with these findings, it was revealed that a comprehensive Digital Literacy Training program can increase employees' Digital Skills Readiness scores by up to 40% compared to the control group. Research conducted by 500

employees in the manufacturing sector showed that continuous Digital Literacy Training has a strong positive correlation with increased Digital Skills Readiness. These findings underscore the importance of long-term investment in the development of employee digital literacy. Chetty et al (2018) van Laar et al (2017) Spante et al (2018) Iordache et al (2017) . It is important to note that not all studies have found a significant association between Digital Literacy Training or Access to Digital Tools and Resources and Digital Skills Readiness. Studies conducted by the manufacturing sector did not find a strong correlation between the number of hours of Digital Literacy Training and the increase in Digital Skills Readiness of employees. Research by found that Digital Literacy Training does not always have a significant effect on Digital Skills Readiness, especially if it is not tailored to specific industry needs. Scherer & Siddiq (2019) Hatlevik et al (2018)

Access To Digital Tools And Resources is the ability of individuals, groups, or communities to access digital technology tools and relevant resources to support educational, work, or daily life activities. Access To Digital Tools And Resources also emphasized that the gap in access to digital tools and resources can widen the digital skills gap in the study society by (A. J. Van Deursen & Van Dijk, 2019) (Robinson et al., 2020). In industrial regions where infrastructure and technological investment differ between companies, such as Bekasi, these access gaps can translate into unequal opportunities to develop and practice digital skills at work.

Meanwhile, several studies have also shown the positive influence of Access to Digital Tools and Resources on Digital Skills Readiness. found that employees who had full access to digital devices and online resources at work showed a 35% increase in Digital Skills Readiness compared to those with limited access. also confirms these findings, reporting that increased access to advanced digital tools correlates positively with employees' Digital Skills Resiliency. Siddiq et al (2016) Hämäläinen et al (2021)

Similarly, research conducted by found that although Access to Digital Tools and Resources towards digital tools increased, there was no significant change in employees' Digital Skills Readiness scores over a one-year period. Researchers have shown that Access to Digital Tools and Resources alone is not enough to improve Digital Skills Readiness without the right training and support. Bergdahl et al (2020) Gui (2011)

In addition, according to a survey conducted by the Indonesian Employers Association, 65% of manufacturing companies in Indonesia have difficulty recruiting employees who have the necessary digital skills. This shows that there is a difference between the needs of the industry and the availability of a digitally ready workforce. This situation further emphasizes the importance of systematic efforts to improve Digital Skills Readiness in Indonesia's manufacturing sector. Pangestu et al (2024)

Current theories and research rely on Self-efficacy in Digital as a mediation between Digital Literacy Training and Access to Digital Tools and Resources for Digital Skills Readiness. Access to training and real skill readiness is heavily influenced by self-efficacy, which is a person's belief in their ability to achieve a specific goal. Digital self-efficacy significantly affects how individuals apply their digital knowledge and skills in daily practice. Digital literacy training and access to digital tools and resources can increase self-efficacy, which in turn encourages individuals to be better prepared for digital challenges. This is in line with findings

that show that self-efficacy acts as a mediator between technology training and technology adoption in the workplace. Furthermore, digital self-efficacy affects the motivation of individuals to continue developing their digital skills, thereby strengthening the relationship between Digital Literacy Training and Access to Digital Tools and Resources to overall Digital Skills Readiness. By understanding the role of self-efficacy mediation, organizations can create training programs and resource provision plans that not only focus on the dissemination of skills and knowledge, but also increase employee confidence in using digital technologies. Ultimately, this will more effectively enhance employees' digital capabilities. Hatlevik et al (2018) Mohammadyari & Soheila (2015)

Self-Efficacy in Digital Tasks is defined as an individual's belief in his or her ability to successfully carry out a particular task. Self-efficacy in the context of digital tasks refers to an individual's belief in their ability to succeed in completing tasks involving digital technology. This concept is important because it can affect motivation, perseverance, and the way a person faces challenges in the use of digital tools and resources. (Arbulú Pérez Vargas et al., 2024) (Yuliyani et al., 2017)

Although Digital Literacy Training is often considered the key to improving Digital Skills Readiness, recent research has shown inconsistent results regarding its effectiveness. Several studies, such as those conducted by found a significant positive impact of Digital Literacy Training on Digital Skills Readiness. Other research such as the one conducted by shows that these relationships are not necessarily linear or direct. This inconsistency indicates the presence of other variables that may affect the effectiveness of training in improving digital skills readiness. Gallardo-Echenique et al (2015) Scherer & Siddiq (2019)

Self-efficacy in Digital Tasks emerges as a potential mediator or mediator that can explain the variation in these outcomes. Based on social cognitive theory, self-efficacy affects how individuals apply the knowledge and skills gained from Digital Literacy Training. The digital context, found that digital self-efficacy plays an important role in translating training into real skills readiness. Considering Self-efficacy in Digital Tasks as a mediator, we can better understand the mechanisms by which Digital Literacy Training affects digital skills readiness, thus providing valuable insights for designing more effective training programs and increasing the success of digital skills development efforts in organizations. Bandura (1997) Hatlevik et al (2018) . Recent research on the relationship between Access to Digital Tools and Resources and Digital Skills Readiness shows mixed and sometimes conflicting results. While some studies affirm the importance of access to digital devices and resources in improving digital skills readiness. Other research found that access alone is not enough to guarantee improved digital skills, this inconsistency suggests the presence of other factors that may be influencing the relationship. (A. J. Van Deursen & Van Dijk, 2019) Scheerder et al (2017)

Self-efficacy in Digital Tasks emerges as a potential mediating variable that can bridge this gap. Social cognitive theory, self-efficacy affects how individuals utilize available resources. In the digital context, it was found that digital self-efficacy plays an important role in determining how access to digital tools translates into effective skills. Considering Self-efficacy in Digital Tasks as a mediator, we can better understand the mechanisms by which Access to Digital Tools and Resources affect digital skills readiness, thereby providing valuable insights to

design more effective strategies in improving digital skills through the provision of access and the development of digital confidence. Bandura (1997) Aesaert et al (2017) . The selection of Bekasi Regency as a research locus with a focus on manufacturing companies is based on its strategic relevance in industrial development in Indonesia. Located in the industrial corridor of Greater Jakarta, the area is a leading manufacturing hub with many multinational and domestic companies, from electronics to automotive. It creates a mature industry ecosystem and provides a representative sample to investigate digital transformation in Industry 4.0.

Rapidly developing infrastructure, such as integrated transportation networks and modern logistics facilities, strengthens Bekasi Regency's position as a strategic manufacturing relationship and a conducive environment for the adoption of digital technology. Industrial estates such as MM2100 and EJIP offer centralized access to manufacturing companies, making data collection easy. According to the findings, this location is ideal for researching Digital Skills Readiness and serves as a catalyst for the diffusion of innovation and the improvement of digital skills collectively. This research aims to produce insights that can be applied more widely. Ras et al (2017)

This study offers a new contribution by exploring the relationship between Digital Literacy Training, Access to Digital Tools and Resources, and Digital Skills Readiness in the context of the manufacturing industry in Indonesia, considering Self-efficacy in Digital Tasks as a mediating variable. Although previous research has examined the importance of digital skills in Industry 4.0, there is still a gap in the understanding of employee digital skills readiness in manufacturing companies, especially in developing countries. This study also responds to the inconsistency of previous findings regarding the effectiveness of digital literacy training and access to digital tools to improve digital skills readiness. Considering self-efficacy as a mediator, this study offers a new perspective in understanding the mechanisms of digital skill enhancement, in line with social cognitive theories and recent findings on the role of digital self-efficacy. In this way, the introduction avoids unnecessary repetition and becomes more focused by clearly outlining the theoretical gap and practical relevance, ensuring that the study is positioned as both academically significant and policy-relevant. This research will also analyze the impact of Indonesian government policies in driving digital transformation in the manufacturing sector, providing valuable insights for policymakers and industry practitioners in designing effective digital skills development strategies. Schröder (2017) (Sony, 2020) Scherer & Siddiq (2019) Scheerder et al (2017) Bandura (1997) (Aesaert et al., 2017; Hatlevik et al., 2018)

The purpose of this study is to explore and analyze the relationship between Digital Literacy Training, Access to Digital Tools, and Digital Skills Readiness in the manufacturing industry sector, considering the mediating role of self-efficacy in digital tasks. This research aims to provide deeper insights into how manufacturing companies in Indonesia can improve the digital skills readiness of their employees in the face of the challenges of rapid digital transformation. This research is expected to identify effective strategies in the sustainable development of digital skills, as well as provide recommendations for stakeholders, including companies and policymakers, to create an environment conducive to digital skills enhancement to support innovation and competitiveness in the industrial era 4.0.

Talent: Journal of Economics and Business
Volume 03 No 04 December 2025
E ISSN : 3031-6383

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This research will discuss how government efforts to encourage digital transformation in the manufacturing sector affect Digital Skills Readiness. This will be done in the context of government policies and regulations, releasing a report on "Indonesia's Industry 4.0 Roadmap" which shows that manufacturing companies that take advantage of government incentives to improve the digital skills of their employees experience a 25% increase in Digital Skills compared to companies that do not take advantage of these incentives (Monoarfa, 2022). By formulating a clear research question and distinguishing between conceptual advances and practical implications, the study aims to contribute both to academic debates on digital capability and to concrete policy and managerial decisions in the Indonesian manufacturing sector.

Method

This research method uses a quantitative approach with a correlational design to analyze the influence of Digital Literacy Training and Access to Digital Tools and Resources on Digital Skills Readiness with Self-Efficacy in Digital Tasks as a mediating variable. The research population is employees of manufacturing companies in Bekasi Regency, with purposive sampling techniques based on certain criteria so that appropriate respondents are obtained. The criteria for inclusion included employees who had worked for at least one year, were actively engaged in operational or administrative tasks requiring digital interaction, and had access to company-provided digital tools, ensuring that participants had sufficient exposure to the constructs under study. Bekasi Regency was selected not only because it is a major manufacturing hub with high industrial activity, but also because it represents a heterogeneous digital transformation landscape where companies vary in their adoption of Industry 4.0 technologies, making it an appropriate and representative setting for examining digital skills readiness in developing-country manufacturing contexts. Primary data was collected through a Google Form-based online questionnaire on a Likert scale, while secondary data was obtained from literature and company documents. Data analysis was carried out using the Structural Equation Modeling (SEM) method based on Partial Least Square (PLS-SEM) with the help of SmartPLS software version 3.0, through a series of stages of validity, reliability, evaluation of outer models, inner models, and hypothesis testing to determine the direct and indirect influence between variables.

Results and Discussion

Average Variance Extracted (AVE) Test

Table 1. Average Variance Extracted (AVE) Test Results

Variable	Average Variance Extracted (AVE)
ADTR (X2)	0,587
DLT (X1)	0,535
DSR (Y)	0,618
SEDT (Z)	0,531

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E ISSN : 3031-6383

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Table 1 presents the results of the Average Variance Extracted (AVE) test to assess the convergent validity of each construct in the study. The AVE scores obtained were 0.587 for Access to Digital Tools and Resources (X2), 0.535 for Digital Literacy Training (X1), 0.618 for Digital Skills Readiness (Y), and 0.531 for Self-Efficacy in Digital Tasks (Z). All AVE values exceed the minimum threshold of 0.50 as suggested by Hair et al. (2014), so it can be concluded that each indicator is able to explain more than half of the variance of the construct it measures. Thus, the construct of this study has adequate convergent validity and is suitable for use in the analysis of subsequent structural models.

Cronbach's Alpha Test

Table 2. Cronbach's Alpha Test Results

	Cronbach's Alpha
Access To Digital Tools and Resources (X2)	0,824
Digital Literacy Training (X1)	0,712
Digital Skills Readiness (Y)	0,794
Self-Efficacy in Digital Tasks (Z)	0,706

Table 2 shows the results of Cronbach's Alpha test used to measure the internal reliability of each research construct. Cronbach's Alpha score was 0.824 for Access to Digital Tools and Resources (X2), 0.712 for Digital Literacy Training (X1), 0.794 for Digital Skills Readiness (Y), and 0.706 for Self-Efficacy in Digital Tasks (Z). All of these values are above the threshold of 0.70 as suggested by Nunnally (1978), which indicates that the research instrument has good internal consistency. This means that the indicators used in each variable can be trusted to measure the construct in question consistently, so that the results of the research can be considered reliable.

Composite Reliability Test

Table 3. Composite Reliability Test Results

	Composite Reliability
Access To Digital Tools and Resources (X2)	0,876
Digital Literacy Training (X1)	0,821
Digital Skills Readiness (Y)	0,866
Self-Efficacy in Digital Tasks (Z)	0,819

Table 3 presents the results of the Composite Reliability test which aims to ensure the internal consistency of the indicator in measuring each construct. The results obtained showed a score of 0.876 for Access to Digital Tools and Resources (X2), 0.821 for Digital Literacy Training (X1), 0.866 for Digital Skills Readiness (Y), and 0.819 for Self-Efficacy in Digital Tasks (Z). All of these values are above the minimum limit of 0.70 according to the criteria of

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Hair et al. (2014), so it can be concluded that all constructs have high reliability. This means that the indicators used are really consistent in representing the variables, so that this research instrument can be declared reliable for further analysis.

Test R Square

Table 4. R Square Test Results

	R Square	R Square Adjusted
Digital Skills Readiness (Y)	0,602	0,591
Self-Efficacy in Digital Tasks (Z)	0,533	0,524

Table 4 presents the results of the R Square test which is used to assess how much independent variables are able to explain dependent variables. The results showed that Digital Skills Readiness (Y) had an R Square value of 0.602 with an R Square Adjusted of 0.591, while Self-Efficacy in Digital Tasks (Z) had an R Square value of 0.533 with an R Square Adjusted of 0.524. This value is included in the moderate to strong category according to Chin (1998), which means that the variables of Digital Literacy Training and Access to Digital Tools and Resources are quite capable of explaining the variation in Self-Efficacy in Digital Tasks, and together also contribute significantly to Digital Skills Readiness. Thus, the research model has good explainability and relevance to support the analysis of intervariable relationships.

Path Coefficient Test

Table 5. Path Coefficient Test Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
DLT -> DSR	0,290	0,298	0,093	3,133	0,002
ADTR->DSR	0,655	0,641	0,107	6,108	0,000
DLT->SEDT	0,275	0,285	0,133	2,070	0,039
ADTR->SEDT	0,510	0,507	0,136	3,743	0,000
SEDT->DSR	-0,158	-0,152	0,108	1,456	0,146

Table 5 presents the results of the Path Coefficient test which illustrates the strength and significance of the relationship between variables in the research model. The results showed that Digital Literacy Training (DLT) had a significant effect on Digital Skills Readiness (DSR) with a coefficient of 0.290 and a value of p = 0.002, and had a significant effect on Self-Efficacy in Digital Tasks (SEDT) with a coefficient of 0.275 and p = 0.039. Access to Digital Tools and Resources (ADTR) has a significant effect on Digital Skills Readiness with a coefficient of 0.655 and p = 0.000, and a significant effect on Self-Efficacy in Digital Tasks with a coefficient of 0.510 and p = 0.000. Meanwhile, the relationship between Self-Efficacy in Digital Tasks and

Talent: Journal of Economics and Business
Volume 03 No 04 December 2025
E ISSN : 3031-6383

https://lenteranusa.id/

Digital Skills Readiness was not significant with a coefficient of -0.158 and p = 0.146. These findings confirm that digital literacy training and access to digital tools contribute directly to improving digital skills readiness, while the role of Self-Efficacy is not strong enough in mediating these relationships.

Indirect Effect Specific Test

Table 6. Specific Indirect Effect Test Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
DLT -> SEDT -> DSR	-0,043	-0,045	0,042	1,041	0,298
ADTR -> SEDT -> DSR	-0,080	-0,076	0,059	1,354	0,176

Table 6 shows the results of the Specific Indirect Effect test used to look at the mediating role of Self-Efficacy in Digital Tasks in the relationship between variables. The results showed that the Digital Literacy Training (DLT) → Self-Efficacy in Digital Tasks (SEDT) → Digital Skills Readiness (DSR) pathway had a coefficient of -0.043 with p = 0.298, and the Access to Digital Tools and Resources (ADTR) pathway → SEDT → DSR had a coefficient of -0.080 with p = 0.176. Both of these results showed a p-value above 0.05, which means the mediation effect was not significant. Thus, although Digital Literacy Training and Access to Digital Tools and Resources have a direct effect on Digital Skills Readiness, the role of Self-Efficacy in Digital Tasks as a mediator has not been proven to be significant. This indicates that self-confidence in digital tasks is not able to strengthen the relationship between digital literacy training and access to digital tools and digital skills readiness.

Discussion

The Relationship of Digital Literacy Training to Digital Skills Readiness

Based on the results of the study, Digital Literacy Training has been proven to have a positive and significant impact on Digital Skills Readiness. This shows that the more individuals who take digital literacy training, the greater their ability to master digital skills. These findings confirm the importance of the Digital Literacy Training program in preparing and improving one's digital skills. In addition, investing in digital literacy training is a strategic step that can help individuals be better prepared to face the demands of digital skills in the modern era. Thus, they will feel more confident and able to utilize digital technology in various aspects of their lives.

Respondent profiles show that these findings are increasingly relevant because the majority of respondents are from the digital native generation, with the majority of workers aged 1 to 3 years old and mostly working in production departments. Although most of the respondents were from high school, the results showed that digital literacy training is essential to improve their digital skills. In addition, the composition of respondents dominated by staff also

shows that digital literacy training has a strategic role in preparing the workforce to adapt to the digital transformation that occurs in the industrial sector.

These findings are in line with research conducted by the Department of Digital Literacy that shows that digital literacy training has a significant positive impact on digital readiness, especially in young age groups with higher levels of education. Similar results were also found in a study conducted where a structured digital skills training program succeeded in increasing digital readiness by 37% in groups with formal education backgrounds. Furthermore, the study revealed a positive correlation between the intensity of participating in digital training and the level of readiness to adopt new technologies, especially in the context of distance learning. Comparison with the three studies strengthens the finding that demographic characteristics such as age, educational background, and experience have an important role in determining the effectiveness of digital literacy training programs in improving digital skills readiness. Van Laar et al (2017) Falloon (2020) Iivari et al (2020)

The results of this study provide several important theoretical and practical advantages for the advancement of digital literacy and digital readiness. In practical terms, these findings can serve as a foundation for educational institutions and organizations to create more effective digital literacy training programs by considering the demographics of participants. Organizations can create a more unique and individualized curriculum with content and learning methods tailored to the participant's design. This research can also help policymakers manage resources and create more targeted interventions to help diverse groups of people prepare for the digital age. From a theoretical perspective, this research improves our understanding of the relationship between a person's nature and the digital learning process, especially in terms of improving digital skills. The findings of this study also open up new avenues for future research, especially on how various demographic variables interact with each other and how these variables influence the effectiveness of digital literacy training. In addition, the findings of this study helped develop a broader research project on this issue.

The Relationship of Access to Digital Tools and Resources to Digital Skills Readiness

Access to Digital Tools and Resources greatly influences Digital Skills Readiness. When a person has easy access to a wide range of digital devices, such as computers, mobile phones, and the internet, they have a greater chance of practicing and honing their digital skills. The hands-on experience in using these tools not only deepens their understanding of technology, but also increases their confidence in interacting with various applications and platforms, as well as overall improving their abilities.

Based on the respondent profiles of this study, the majority of participants consisted of young employees between the ages of 18 and 25, with a predominance of women. Most of them have less than one year of work experience, and are generally employees. The educational background of the respondents is mostly high school graduates, and they come from various industrial areas, such as MM2100, EJIP, and various factories in the Bekasi Regency area. This demographic characteristic shows that the majority of respondents are the generation that grew up in the digital era. With their presence in industrial estates that are generally equipped with adequate digital infrastructure, it is expected that they will have sufficient access to digital tools

and resources. However, differences in education level and length of work experience can affect how individuals take advantage of digital access to prepare in a job context.

These findings are in line with several previous studies that explored the relationship between Access to Digital Tools and Resources and Digital Skills Readiness. Research conducted by revealed that material access to digital devices significantly affects the level of digital skills, especially in young age groups in the work environment. This is reinforced by studies that found that workers with better access to digital resources in the workplace show higher levels of digital readiness, particularly in groups with a tenure of 1-3 years. Furthermore, the research underlines that education level and work location (such as industrial estates) have an important role in determining how individuals leverage their digital access for skills development, which is in line with the characteristics of the respondents in this study who are the majority of whom have a high school education background and are spread across various industrial estates. Van Deursen & Van Dijk (2019) Ragnedda & Ruiu (2020) Scheerder et al (2017)

This research offers significant contributions both theoretically and practically. Practically Given the dominance of young employees and relatively new work experience, the results obtained can be a foundation for companies in industrial estates to formulate a more structured strategy to increase digital access. In order for employees with a high school education background to make the most of digital tools in the workplace, it is important to tailor digital skills development programs to their demographics. Theoretically, this study deepens our understanding of the relationship between digital access and digital skills readiness in the industrial context in Indonesia, especially in a work environment dominated by the younger generation. In addition, these findings also provide new insights into how factors such as education level, working tenure, and location of industrial estates can affect the effectiveness of digital access in improving employees' digital skills readiness.

The Relationship of Digital Literacy Training to Self-Efficacy in Digital Tasks

Digital literacy training has a significant positive influence on a person's self-efficacy in carrying out digital tasks. Structured Digital Literacy Training not only provides participants with technical knowledge and skills, but also gives them confidence and confidence in their ability to overcome various digital challenges. This increase in independence can be seen from how trainees become more confident in completing tasks that require digital technology, are bolder to try new features, and are more confident in using them.

The relationship between Digital Literacy Training and self-efficacy is reflected in an interesting pattern in the respondents' profiles. Most respondents were between the ages of 18 and 25 and had between 1 and 3 years of work experience, with many of them being women. This shows that this generation is able to adapt well to digital technology. In terms of education, the majority of respondents are high school and S1 graduates, with a varied distribution in various fields of study, especially in the production sector. This indicates that digital literacy training is relevant not only based on education level, but also related to the job sector. This pattern emphasizes the importance of digital literacy training to increase self-efficacy among employees from various backgrounds, especially considering the demographic characteristics

dominated by the younger generation who are building their early careers in various industries, such as in the MM2100, EJIP, and surrounding areas in the Bekasi Regency area.

These findings are in line with several previous studies that have strengthened the positive relationship between digital literacy training and self-efficacy. Research by revealed that digital literacy training has a significant impact on increasing self-efficacy in the young age group (18-25 years), especially in the aspect of using technology for the completion of work tasks, which supports the findings of this study with the dominance of respondents in the same age range. A comprehensive study by showed that employees with less than 3 years of work experience experienced a higher increase in self-efficacy after participating in a systematic digital literacy training program, reinforcing the results of this study where respondents had a tenure of 1-3 years. Furthermore, the study found a positive correlation between digital literacy training and increased self-efficacy in the work environment, with the highest effectiveness in the group of employees under 30 years old who have a secondary to undergraduate education background, in line with the demographic characteristics of the respondents in this study. Honicke & Broadbent (2016) By (2012) Tang & Chaw (2016)

The results of this study have significant theoretical and practical implications for human resource development in the contemporary era. In practical terms, these findings show how important it is to create digital literacy training programs that are organized and tailored to employee demographics, especially considering the younger generation of the entire workforce in the industrial sector aged 18 to 25. Taking into account the wide range of educational backgrounds from high school to S1, as well as a relatively recent tenure with about 1 to 3 years of work experience, companies should create training modules that focus on improving knowledge and skills using digital technology. Theoretically, this research expands our understanding of the relationship between digital literacy and self-efficacy in the manufacturing industry, especially in production departments that require rapid technological transformation. These results also provide an empirical basis for building a training model that combines technical and psychological aspects. They also point out how important it is to use a holistic approach to improve the digital skills of employees at different levels of the position, especially at the staff level, which is the operational pillar of the company.

The Relationship of Access to Digital Tools and Resources to Self-Efficacy in Digital Tasks

The results of the analysis show that accessibility to digital devices and resources increases self-efficacy in managing digital tasks. A person's confidence level and their ability to complete a variety of digital tasks are significantly influenced by the availability and ease of access to comprehensive digital infrastructure. The results show that planned investments in ideal digital access serve as a key catalyst for accelerating digital skills development and sustainable self-efficacy formation. Because exposure to and hands-on experience with digital technology allows people to develop their own digital skills and capabilities, this results in a multiplier effect that increases overall digital productivity and performance.

A correlation analysis of the respondents' demographic profiles further sheds light on these findings. Of the total 114 respondents, who were dominated by the young generation aged 18-25 years, most had a high school education background and 1-3 years of work experience.

This data shows a positive trend in adapting to digital technology. Most of the respondents worked in production departments and held staff positions in various industrial estates, such as MM2100 and EJIP. In this environment, accessibility to digital devices and the ability to adapt to technology are fundamental needs in carrying out daily operational tasks. This situation indirectly encourages the improvement of their digital self-efficacy through intensive practical experience in a work environment that has undergone digitalization.

The findings of this study on the influence of Access to Digital Tools and Resources on digital self-efficacy reinforce the results of previous studies that have been conducted. revealed that Access to Digital Tools and Resources has a significant contribution to improving digital competence, especially in young age groups with secondary education backgrounds. This is reinforced by research that found a positive correlation between the availability of digital access and increased confidence in digital information evaluation, especially in groups with intensive technology exposure. Furthermore, the study identified that demographic factors such as education level and work experience had a significant moderation effect, with groups with a working period of 1-3 years showing increased digital competency when given optimal access to digital tools and resources in the work environment. Zhao et al (2021) Hatlevik et al (2018) Falloon (2020)

There are many theoretical and practical consequences of the results of this study. From a theoretical perspective, this study enriches the literature on digital capabilities by showing that the accessibility of digital technology has a direct impact on the formation of self-efficacy, especially in the context of the Indonesian manufacturing industry, where the young generation dominates. The theoretical model resulting from this research can be used as a foundation to develop a more comprehensive framework to understand the components that make up digital self-efficacy in e-commerce. From a practical perspective, these findings provide strategic insights for company management in designing employee digital competency development programs. This means that investments must be prioritized to provide adequate digital infrastructure and access, especially for production departments, which have the largest proportion of employees. Additionally, the technology implementation strategy should be tailored to take into account employee demographics, as this will result in more better results than will be produced.

The Relationship of Self-Efficacy in Digital Tasks to Digital Skills Readiness

The results of the study show that Self-Efficacy in Digital Tasks does not necessarily determine their digital skills readiness. This shows that self-efficacy in digital tasks does not have a significant influence on digital skill readiness. These results are interesting because they show that even if a person feels confident in using digital technology, it does not necessarily indicate the true level of digital skill readiness. Therefore, there needs to be other factors that are more influential in developing digital skills, such as formal training, practical experience, or environmental support.

The characteristics of the study respondents were very diverse, with the majority of employees aged 18-25 years and the majority having work experience from 1 to 3 years. Interestingly, although most respondents were staff-aged and had a high school degree, there was

no correlation between self-ability to do digital tasks and readiness to use digital skills. The relationship between self-confidence in doing digital tasks and their digital skill readiness was not influenced by demographic factors or work background, as shown by the composition of respondents dominated by the younger generation who are familiar with digital technology, especially in the production department and spread across various industries such as MM2100, EJIP and the Manufacturing area in Bekasi Regency.

The findings of this study are in line with several studies that show a negative relationship between Self-Efficacy in Digital Tasks and Digital Skills Readiness. For example, research has found that self-confidence in digital tasks is not always directly proportional to actual digital skills. Studies reveal a gap between digital confidence and true digital capabilities. Furthermore, research shows that there are complex factors that play a greater role in determining digital skill readiness than just self-efficacy. A. van Deursen & van Dijk (2011) van Laar et al (2017) Gui (2011)

The practical implications of this study suggest that organizations need to develop digital skills development strategies that not only rely on self-efficacy, but also take into account contextual factors such as technology infrastructure, ongoing training programs, and organizational support. Theoretically, these findings enrich the literature on the complex relationship between digital self-confidence and digital skills readiness, underscoring the importance of a multidimensional approach in understanding digital competencies. This research makes a conceptual contribution by showing that self-efficacy is not a single, reliable predictor of digital skills readiness, thus encouraging further research on the factors that significantly influence the development of digital competencies in organizational contexts.

The Relationship of Digital Literacy Training to Digital Skills Readiness Mediated by Self-Efficacy in Digital Tasks

Research on the relationship between Digital Literacy Training and Digital Skills Readiness mediated by Self-Efficacy In Digital Tasks, there are several interesting phenomena. The expected mediation pathway has not had a significant impact. This shows that even if a person is trained in digital literacy, increasing his or her ability to complete digital tasks does not necessarily have a direct impact on his digital skills readiness. These results show that the process of developing digital competencies is very complex. There, other components such as personal context, work environment, intrinsic motivation, and actual practice opportunities may be more important than training and self-perception of abilities. Thus, this study shows that digital skills development methods require a more comprehensive, integrated, and sustainable approach rather than being limited to training or confidence-building.

The majority of respondents were female and the majority were aged 18-25 years. Most of the respondents were staff and most had a high school degree. These demographic factors provide an important context for understanding the dynamics of digital skills and digital literacy. Respondent profiles indicate that contextual factors may need to be considered, although previous research findings suggest that digital skills training does not contribute significantly to readiness for digital skills through self-efficacy in digital tasks. Most respondents, who are

young and with the majority of high school graduates, indicated that digital training may require a more tailored approach to the characteristics of millennials and Gen Z.

Most respondents from various departments, including production, human resources, and finance, also argued that To meet the digital needs of each division, the digital literacy training model should be tailored to meet the specific job needs of each unit. Although the study did not show significant results, respondents' attributes such as education level and industrial area (in GIIC, EJIP, MM 2100, and JABABEKA) suggest that there is a need for a more in-depth analysis of how demographic and organizational elements can affect the effectiveness of digital training and self-efficacy building in digital tasks.

Aesaert & Van Braak (2014) reveal the complexity of factors that affect teachers' digital literacy. The study, which involved 650 respondents, found that the development of digital competencies does not only depend on formal training, but also on individual factors such as attitudes, motivation, and personal experience in using technology. provides a critical perspective on the assumption that the digital native generation automatically has adequate digital skills. By analyzing 1000 respondents, this study shows that exposure to technology does not necessarily result in comprehensive digital literacy. They need systematic guidance to develop critical thinking skills and responsible use of technology. focusing on the analysis of the digital competencies of Italian teenagers, provides a surprising finding that young generations do not always have complex digital skills. Despite being proficient in using social media and simple apps, they struggle in more in-depth digital skills such as information analysis, technical problem-solving, and the use of technology for academic purposes. By (2012) Calvani et al (2012)

This research has practical consequences because it provides an important understanding for organizations and stakeholders on how to create strategies to improve digital competencies. In practical terms, the results of the study underscore the importance of a comprehensive approach that not only relies on conventional training but also incorporates more contextual and dynamic digital skills development techniques. Organizations should create training programs that are more tailored to individual characteristics, job-specific needs, and digital skills development stages.

Theoretically, this study uncovers the complexity of knowledge transfer mechanisms and competency transformation and enriches the conceptual framework of the relationship between digital literacy training, self-efficacy, and digital skills readiness. The findings of this study encourage the creation of new, more integrative theoretical models that consider multidimensional components in the process of developing digital literacy and skills. In addition, this research opens up space for in-depth research on the contextual components that affect the effectiveness of digital training, and encourages more complex and comprehensive research methods to understand the dynamics of digital skills development in the era of transformation.

The Relationship of Access to Digital Tools and Resources to Digital Skills Readiness Mediated by Self-Efficacy in Digital Tasks

Research on the relationship between Access to Digital Tools and Resources and Digital Skills Readiness mediated by Self-Efficacy In Digital Tasks, results showed that broad access to

digital technology does not necessarily guarantee an improvement in one's digital skills. This happens even when a person has adequate access to various digital devices and resources, but without self-efficacy in performing digital tasks. This suggests that psychological factors such as a person's confidence and perception of their ability to complete digital tasks are just as important as the availability of technology access. As a result, having access alone is not enough to develop digital skills optimally. Additionally, access may be uneven in quality, with shared devices, intermittent connectivity, or limited permissions constraining meaningful practice, which reduces the opportunity for self efficacy to translate into generalized readiness.

The demographic characteristics of the respondents' profiles indicate the potential causes of the phenomenon. Most of the respondents were female, aged between 18 and 25, with a tenure of between 1 and 3 years, and working as staff. They also have a high school degree. This condition shows that, even though respondents are in the productive age range and digital natives, low variation in work experience and education level can contribute to the contribution of respondents' self-efficacy in the transformation of digital resource access into adequate digital skills. As a result, the relationship between digital resource access and digital skills readiness is not significant. Culturally, preference for guidance from supervisors and reliance on team norms may further limit individual discretion, weakening the motivational pathway from access through self belief to readiness.

The findings of this study are different from several previous studies that show the complexity of the relationship between digital access and digital literacy. For example, research reveals that the availability of digital tools does not necessarily improve digital literacy skills, especially in the advanced skills dimension. In line with that, it found that digital access is not always directly proportional to the ability to use technology effectively. Furthermore, the research emphasizes that individual differences, such as self-efficacy, play a critical role in determining the successful use of digital resources. Deursen & van Dijk (2015) Gui (2011) Hargittai (2010)

Carrying significant theoretical and practical implications, the research findings show an insignificant relationship between digital literacy training and access to digital resources through self-efficacy in digital tasks. These findings theoretically strengthen the conceptual framework on digital transformation by confirming that digital skills are not only influenced by access to technology more than that, psychological constructs such as self-efficacy play an important mediator. These results encourage the creation of broader theoretical models that go beyond the paradigm of technological determinism and emphasize how important the human factor is to digital adoption. In practical terms, the study provides concrete advice for organizations and policymakers to focus more on capacity-building programs that build individual confidence in technology rather than just providing digital infrastructure. For the transformation of access into meaningful and sustainable digital skills, suggested interventions include tailored training, ongoing support, and an environment that supports digital experimentation without fear of failure.

Talent: Journal of Economics and Business
Volume 03 No 04 December 2025
E ISSN : 3031-6383

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Conclusion

The conclusion of this study shows that Digital Literacy Training and Access to Digital Tools and Resources have a significant effect on Digital Skills Readiness, while the mediating role of Self-Efficacy in Digital Tasks is not proven to be significant. Theoretically, this challenges the common assumption that self-efficacy universally mediates capability building, refining the boundary conditions of self-determination and social cognitive perspectives in the context of Indonesian manufacturing. The results of the validity and reliability test ensure that all constructs in the model are feasible and consistent, and the R Square value confirms the model's ability to explain dependent variables in the moderate to strong category. This strengthens confidence in the measurement model while indicating that variance in readiness is better explained by structural and training factors than by self-beliefs alone. The path coefficient shows that digital literacy training and access to digital tools directly increase employees' digital skills readiness, while self-efficacy does not strengthen the relationship. Practically, this implies that HR managers and policymakers should prioritize task-aligned curricula, guided practice, and sustained feedback, rather than relying solely on confidence-building workshops, and should improve the quality, reliability, and relevance of access to ensure transfer to job tasks. These findings emphasize the importance of company investment in digital literacy training programs and the provision of adequate technology access as the main strategy to improve the digital competence of the workforce, especially in the manufacturing sector of Bekasi Regency, in order to be able to adapt to industrial transformation 4.0. This study is limited by its cross-sectional design, reliance on self-reported data, and single-region focus, which may constrain causal inference and generalizability. Future research should employ longitudinal or experimental designs, incorporate objective performance indicators, and test alternative or additional mediators such as learning climate, supervisory support, digital culture, and opportunities for deliberate practice, as well as potential moderators including job complexity and tenure.

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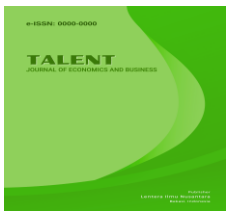

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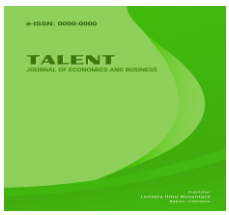

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