Decision Science Letters 13 (2024) 853–866

Contents lists available at GrowingScience

Decision Science Letters

homepage: www.GrowingScience.com/dsl

Comparative study of the impact of information literacy, digital literacy and media literacy on employability between Indonesia and Malaysia

David Sukardi Kodrat[a*], Damelina Basauli Tambunan[a], Wendra Hartono[a], Phuah Kit Teng[b] and Chow Poh Ling[b]

[a]*Ciputra University Surabaya, Indonesia*
[b]*Tunku Abdul Rahman University of Management & Technology, Malaysia*

C H R O N I C L E

Article history:
Received: April 25, 2024
Received in the revised format: July 29, 2024
Accepted: August 19, 2024
Available online: August 19, 2024

Keywords:
Information literacy
Digital literacy
Media literacy
Attitude toward use
Employability

A B S T R A C T

The purpose of this research is to explore the relationships between information literacy, digital literacy, media literacy, Attitude toward use, and employability to examine the role of information and digital literacy in influencing employees' intentions to use technology in the workplace. The research sample for Indonesia was 250 respondents and for Malaysia there were 298 respondents. The data collection method uses Google Forms, distributed to respondents through purposive random sampling technique. The research results indicate that in Indonesia, Computer Literacy (CL) on Perceived Usefulness (PU), PU on Attitude towards Use (ATT), and ATT on Employability (EMP) have a big influence. On the other hand, Information Literacy (IL) and CL have a small influence on Employability. Likewise, Perceived Ease of Use (PEOU) has little influence on ATT. Malaysia, which has a big influence is Digital Literacy (DL) on Employability (EMP) and Perceived Ease of Use (PEOU). However, DL has a small influence on PU, as does IL on EMP, PEOU, and PU. Likewise, the influence of PEOU on PU is small.

1. Introduction

The information and digital era require strategic resources and special skills. The specific skills that employees need in order to be able to work optimally in the workplace are information literacy (IL), digital literacy (DL) (Nikou, S., et al., 2022) and media literacy (ML) (Collard, et al., 2017). IL and DL directly impact the perceived ease of use of technology. Research results indicate that both IL and DL have an indirect impact on the intention to use digital technology in the workplace through attitude towards use (Nikou et al., 2022). Today's ways of working have undergone the most rapid changes since the industrial revolution of the 19th century. According to the 2021 World Economic Forum Report, the average skill lasts only 2.5 years. Thus, it is estimated that 40 percent of skills will change in the next five years. Digitalization, via the implementation of digital technology and infrastructure, has significantly altered job design, job resources, and professional activities.

According to PwC almost 47 percent of jobs are at risk of being automated in the next few decades. For this reason, companies need to explore these changes. The aim is to find out how digitalization in the workplace affects employee engagement (Chan, et al., 2021). For example, the global pandemic is an extraordinary event that has accelerated this transformation process. In addition, the pandemic has pushed the digitalization process to become more complex (Livari et al., 2020; Konig et al., 2020). Thus, remote working skills and organizational operations are becoming new challenges for traditional organizations. The organization responded to this digitalization challenge by developing a digital strategy. Apart from that, organizations also identify key factors for the success of digital transformation (Hess et al., 2016; Vial, 2019). Organizations that cannot adopt, implement and deploy technology solutions in a timely manner will fail to thrive.

* Corresponding author.
E-mail address david.kodrat@ciputra.ac.id (D. S. Kodrat)

doi: 10.5267/dsl.2024.8.006

Technology represents just one of the challenges of digitalization, encompassing both hardware and software. Another significant challenge is developing a workforce that can adapt to change, effectively use technology, and exhibit appropriate post-adoption behavior (Bala & Venkatesh, 2016; Colbert et al., 2016; Farrell et al., 2021). This implies that the current workforce's literacy levels are not sufficient to meet the future literacy needs in the workplace.

Literacy is the competence, knowledge and skills that a person has to interact and relate to colleagues, the community and the work environment (Panel, 2002). In the process of recruiting new workers, organizations will seek candidates who possess high literacy levels, particularly in information literacy (IL), digital literacy (DL) (Mietzner & Kamprath, 2013), and media literacy (ML) (Collard et al., 2017). This literacy is connected to personal attributes in the digital era (Bowen & Johnson, 2019; Foster, 2019; Dede, 2010). Efficient, transformative digitalization and a digital-ready workplace can be realized with literacy across all types of organizations, positions, job designs, and individuals to improve and fulfill their performance. In this research, information literacy, digital literacy and media literacy are used in analysis through digital technology in the workplace context to improve individual performance and organizational performance.

Information literacy (IL) is the capacity to identify when information is required and to make decisions within the framework of formal and informal learning in the workplace (ACRL, 2017). Digital literacy (DL) encompasses the cognitive and technical skills required to utilize information and communication technology for locating, evaluating, creating, and sharing information (American Library Association, 2012). Essentially, DL refers to an individual's awareness, attitude, and proficiency in using and engaging with digital technology. This enables the easy and effective access to information in various formats, including text, video, and images (Cetindamar et al., 2021; Stordy, 2015; Van Dijk & Van Deursen, 2014). The necessity for both information literacy (IL) and DL is viewed as a dynamic capability for organizations undergoing digital transformation (Cetindamar et al., 2021). These literacies are based on knowledge, perceptions, and attitudes (Bawden, 2001). IL and DL are very relevant in the work environment (Gui & Argentin, 2011). Both have a role in achieving goals, success in the workplace, and improving individual and organizational performance (Somerville, et al., 2017). In addition, workers are expected to have developed critical literacy before work (Kane et al., 2019) to fill the competency gap between digital competencies and the needs of the world of work (Ancarani and Di Mauro, 2018; Cetindamar et al., 2021; Murawski and Bick, 2017). They are also required to be able to overcome complexity in the workplace (Raish and Rimland, 2016; Van Laar, et al., 2017). This shows that the workforce requires technological skills and the ability to adapt to developments in the world of work (Ahmad et al., 2013; Carnevale & Smith, 2013).

Research on information literacy (IL) and digital literacy (DL) within the workplace is still quite limited. These concepts are often incorporated into the Technology Acceptance Model (TAM) (Davis, 1989). It is suggested that IL and DL directly affect the core determinants of the Technology Acceptance Model (TAM): perceived usefulness (PU), perceived ease of use (PEU), and attitude towards use (ATT). Consequently, IL and DL indirectly impact the intention to use technology in the workplace, with attitude towards use (ATT) acting as a mediator. However, the influence of literacy is heavily dependent on the novelty of the technology. Employees who are well-versed in the information environment (IL) and skilled in using technology (DL) are more likely to understand technology better, find it easier to use (PEU), and thus appreciate its usefulness (PU). This research will explore the relationships between IL, DL, ML, ATT, and employability, examining the role of information and digital literacy in influencing employees' intentions to use technology in the workplace.

2. Literature review

Employees' information and knowledge drive business and service excellence in the workplace. Employees who are information literate are regarded as a strategic asset (Kirton & Barham, 2005; Lloyd, 2003; Middleton & Hall, 2021; Oman, 2001). Technology that is increasingly sophisticated and easy to use (Bilgihan, 2016) is becoming important for the interaction and application of information in the workplace as new jobs emerge. However, the older generation of the workforce remains resistant to adopting information technology (Lapointe & Rivard, 2005). Simultaneously, the rising demand for decision-making and problem-solving abilities emphasizes the organization's need for skilled workers. These employees must be competent and adaptive (Simao & Franco, 2018; Renta-Davids et al., 2014), as well as proficient in interacting with technology and information (Urena et al., 2019). This need arises alongside changes in the digital technology landscape and global economic demands (Nufukho et al., 2017). This situation requires employees to continuously develop their skills in information literacy, ICT literacy, technology literacy, media literacy, and internet/online literacy (Kasempsap, 2018; Marsh, 2018). These competencies enable employees to engage with technology, comprehend it, and effectively utilize it (Cetindamar et al., 2021).

Individual success in today's modern workplace is determined by their ability to use a variety of technologies (Eshet, 2004). Complex cognitive, motor, sociological and emotional skills are necessary for their digital abilities to function effectively. DL in the context of the workplace in the digital era encompasses a richer set of digital behaviors, practices and identities (Hunter, 2018). This shows that DL is not only about the ability to use software or operate hardware. The context of IL and DL in the workplace has a very specific role compared to the educational context. In this digital era, employees across generations have different perspectives on the benefits of technology in daily activities (Murray, 2011; Colbert et al., 2016). For instance, the new generation of workers shows differing intentions to use digital technology in their daily activities compared to their workplace usage. In addition, individuals with low levels of literacy are not critical of technology use or will experience difficulties in using work-related technology (Kohnke, 2017). Conversely, individuals with a high level of

literacy perceive technology as a cognitive challenge because they are familiar with the content, interface, access options, terminology, and norms of new tools (Mohammadyani & Singh, 2015).

The new generation of the workforce is employing innovative approaches to managing information and assessing workplace interactions. The failure to access and utilize current and relevant information in the workplace is seen as both a professional and ethical shortcoming (Forster, 2017). In the workplace, information literacy (IL) is bolstered by various business applications and ICT technologies, which act as tools to achieve organizational objectives. As a result, employees need to interact with information both individually and collaboratively to create business value. This literacy is essential for improving both personal and organizational performance.

3. Theoretical Model and Hypothesis Development

The Technology Acceptance Model (TAM) is used to assess and evaluate the factors influencing the intention to use technology in the workplace, incorporating IL and DL as new antecedents in this research model. Some theories and postulates supporting this hypothesis are as follows:

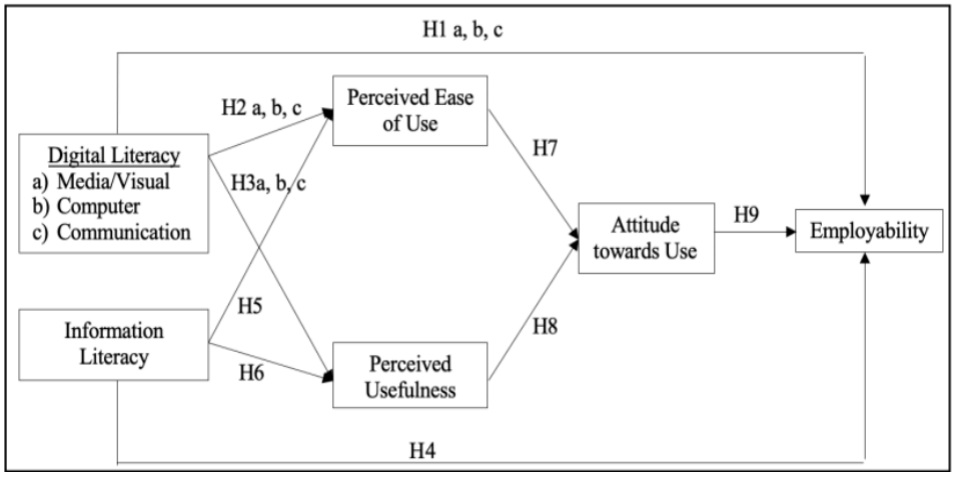

Fig. 1. Conceptual Framework Digital Literacy, Information Literacy, and Employability

Employability describes the combination of various factors and processes that encourage people to advance or enter work, remain employed, and continue employment (Government of Scotland. 2012). The world population shows that 47 percent of people aged between 16 and 74 years have low or even no digital skills (Telecentre Europe, 2014). This makes them not considered to function in a digital society. A document published by the New South Wales Board of Studies explains there are eight skills that will increase employability. These skills encompass communication, teamwork, problem-solving, initiative and enterprise, planning and organizing, independence, learning management, and technology. Technological skills can be categorized as follows: possessing a basic set of IT skills, using IT as a management tool, employing IT to organize data, being open to learning new IT skills, having the knowledge to apply technology effectively, and having the necessary physical capacity (NSW, 2012).

The JISC report informs that the digital literacy model consists of seven elements, namely media literacy; communication and collaboration; career and identity management; ICT (computer) literacy; study skills; digital scholarships; and information literacy (JISC, 2014). From this digital literacy model, the dimensions used in this research are media, computer and communication literacy. Digital skills are seen as necessary skills for today's jobs and the jobs of the future for young people (OECD, 2015). Job requirements in the world of work require all of these skills and factors. Vrana's (2016) research results show that students realize the importance of the concept of digital literacy to increase their chances of getting a job. Apart from that, this research also confirms the existence of a relationship between digital literacy and their work abilities. Digital skills will also improve students' employability and will help employers obtain a digitally literate workforce. Thus, the hypothesis of this research is:

H_1: *Digital literacy influences employability.*

H_4: *Information literacy influences employability.*

3.1 Information Literacy and Digital Literacy

IL can be used by information literate people to master information content, find information effectively, recognize when information is needed, and evaluate web-based information productively (Yu, et al., 2017; Ng, 2012; Kirton & Barham, 2005). Both studies show that individual abilities and skills related to information literacy are needed in the digital era. Even the JISC Report shows that 90 percent of all new jobs require good digital skills (JISC, 2014). Low IL training preparation

is one of the causes of low levels of IL in the workforce (Gilbert, 2017; Kirton & Barham, 2005). Research on information literacy (IL) indicates that scientists are very confident and knowledgeable in using search tools and electronic information services. However, they lack confidence in understanding and evaluating the quality of the information (Naveed & Rafique, 2018). Additional research on nursing staff has shown that IL positively influences their attitudes, performance, and expectations, thereby enhancing their intention to use nursing information systems (Chang et al., 2020). Consequently, there is an urgent need for standardized IL training and teaching programs for employees in the workplace. This research highlights the use of phenomenography as a theoretical perspective (Limberg, Sundin, & Talja, 2012).

IL is a concept to describe a person's ability to use and manage information for various purposes. In contrast, DL is an interaction between technology and the use of ICT. In general, organizations need various types of IL as resources and tools, information synthesis, information evaluation, collaboration with colleagues, while digital skills (DL) are highly required from the workforce (Gilbert, 2017. Research on TAM adoption finds that employees who reject information systems are the main factor in the failure to adopt new technology (Durodolu, 2016). Perceived Usefulness (PU) and Perceived Ease of Use (PEU), as constructs of the Technology Acceptance Model (TAM), significantly influence users' attitudes and their intentions to use mobile library applications (Yoon, 2016). Furthermore, studies on the effect of digital literacy (DL) on employees' intention to use technology in small and medium enterprises have shown that DL significantly impacts performance and the intention to utilize Web 2.0 tools (Mohammadyari & Singh, 2015).

Individuals with digital literacy (DL) have the technical and operational skills required to use technology effectively. DL comprises a set of skills and strategies that are essential in disruptive digital business environments (Sousa & Rocha, 2019). It encompasses the intersection of technical, cognitive, and social-emotional dimensions (Ng, 2012). The technical dimension highlights the need for employees to have knowledge of using ICT and the capability to operate digital technology tools, including the internet, computers, internal company web portals (intranet), and workplace platforms. It also encompasses the latest digital developments, such as the Internet of Things (IoT), cloud technology, big data, artificial intelligence, and robotics.

The cognitive dimension encompasses the ability to critically operate digital technology, evaluate and manage digital information effectively, enhance network navigation, and avoid disorientation, thereby improving the ability to build knowledge (Eshet, 2004; Lee & Hsu, 2002). Consequently, DL competency requires employees to understand ethical and moral issues and to have the ability to assess the validity of resources, including considerations of copyright and plagiarism. Additionally, *the social-emotional dimension* includes using the internet responsibly for communication, socialization, and learning, while respecting others' privacy and following rules in different contexts and environments. This topic becomes more important considering the large digital literacy gap between regions (Tinmaz, et.al., 2022). In the workplace context, IL and DL affect the workforce's perception of ease of use but do not significantly influence their perception of the technology's usefulness. The assumption is that a high level of literacy makes society critical. Thus, someone with a high level of literacy is fairly confident that they can use a new technology introduced in the workplace but may be skeptical of its usefulness unless it is used in practice, then:

H_2: *DL has a positive effect on PEU of technology in the workplace.*

H_3: *DL has a significant positive influence on PU.*

H_5: *IL has a positive effect on PEU of technology in the workplace.*

H_6: *IL has a significant positive influence on PU.*

3.2 Perceived Usefulness (PU) and Perceived Ease of Use (PEU)

The Technology Acceptance Model (TAM) is extensively used in research on the acceptance and adoption of new technological solutions at both individual and organizational levels (Davis, 1989). TAM is determined by three key constructs: Perceived Usefulness (PU), Perceived Ease of Use (PEU), and Attitude Towards Use (ATT). **PU** represents the user's subjective perception that utilizing technology will enhance job performance, while **PEU** reflects the users' belief that employing a particular system will be effortless. IL and DL are added to TAM and Theory of Reasoned Action (TRA). TAM is used to assess the role of this literacy through TAM determining factors on intention to use technology in the workplace. For this reason, it is very important to understand why technology is rejected or accepted (Nikola & Granic, 2015). TRA was developed to predict and understand human behavior and attitudes. This theory critically evaluates behavioral intentions compared to attitude as a predictor of behavior. This theory shows that actual behavior can be determined by previous intentions in addition to the beliefs a person has regarding given behavior (Fishbein and Ajzen, 2010). The Theory of Planned Behavior (TPB) addresses this limitation of the Theory of Reasoned Action (TRA). The purpose of TPB is to predict people's intentions to carry out a behavior at a certain place and time. In essence, TPB describes all behavior carried out by individuals who have the capacity to exercise self-control (Ajzen, 2006). Resistance is often used as the main reason for the failure to adopt new technology (Kim & Kankanhalli, 2009). This rejection shows that people find it difficult to accept initiatives, perceptions, ideas, and also show actions to oppose undesirable circumstances because of the lack of incentives (Siegel, 2008). In reality, this fear stems from cognitive anxiety related to new technology. This anxiety is known as "technophobia" (Selvaganapathi and Raja, 2012). This is common in the 21st century. Technology is increasingly popular

in every aspect of human life. A solution that can be achieved is by providing appropriate instructions and training regarding the use of technology and its application. Existing research indicates that PEU significantly influences PU (Sun et al., 2009). Consequently, both PU and PEU positively impact technology ATT (Fagan et al., 2008). This research aims to test whether IL and DL indirectly influence attitudes through the mediating effects of PU or PEU. Thus, the proposed hypothesis is:

H_7: *PEU has a significant positive influence on ATT.*

H_8: *PU has a significant positive influence on ATT.*

3.3 Attitude Towards Use (ATT)

Studies on attitudes towards technology (ATT) show that individuals born between 1979 and 1994 exhibit different attitudes compared to previous generations of employees (Solnet et al., 2012). Additionally, other studies show that men are more supportive of technology use than women (Cai et al., 2017). These differences can be further attributed to individual characteristics such as age, gender, and educational status. Further research finds that employees who prefer technology generally have more positive attitudes towards experiencing and using new technologies, such as smart factory technology (Oh et al., 2019). Additionally, most company employees have a favorable attitude towards e-learning technology because they see the advantages of integrating it into their existing practices (Kimiloglu et al., 2017). Therefore, the proposed hypothesis is:

H_9: *ATT has a positive effect on employability.*

4. Data Analysis

The research sample for Indonesia was 250 respondents and for Malaysia there were 298 respondents. The analysis of path relationships in research models should first address the measurement model, followed by the structural model (Gefen & Straub, 2005). After all indicators reflect the model, a reliability test and validity test are carried out (Hair et al., 2013) by checking outer loadings, composite reliability and average variance extracted (AVE). The outer loading value must be above 0.7 (Hulland, 1999). The composite reliability value which shows internal consistency is 0.7 (Hair et al., 2011). The internal consistency of latent constructs test was carried out with Cronbach's Alpha, the recommended value of which is above 0.7 (Hair et al., 2012). Cronbach's alpha tends to provide conservative measurements in PLS-SEM. Common method bias (CMB) was assessed to identify any bias associated with the measurement method, employing Harman's one-factor test (Podsakoff et al., 2003) and the common latent factor (CLF) approach (Podsakoff et al., 2012). The common latent factor (CLF) approach provides a more comprehensive understanding of common method bias (CMB) compared to Harman's one-factor test, as it allows for the comparison of chi-square values between the two models. Lastly, the discriminant validity test is conducted to evaluate the distinctiveness of the measurement construct by utilizing the square root of the AVE value for each latent variable (Henseler et al., 2015). Convergent validity is tested by calculating the AVE value for each construct, which is recommended to be above 0.5 (Bagozzi & Yi, 1988).

The stages of model testing with SmartPLS analysis include the following stages:

1. Outer model testing, namely testing the measurement model to prove validity and estimate the reliability of indicators and constructs. Some of the requirements that must be met are:

   a. The indicator loading factor must be more than 0.7

   b. AVE of reflective construction is more than 0.5

   c. The square root of AVE must be greater than the correlation between constructs

   d. Cronbach Alpha is more than 0.7 and composite reliability is more than 0.7

2. Goodness of fit model testing is conducted to assess the predictive power and feasibility of the model. The criteria it uses are:

a. Q2 predictive relevance to see the predictive power of the model obtained from the Smartpls blindfolding output

b. Model fit is assessed to determine whether the model and data are suitable for testing the influence of variables. One key condition is that the Standardized Root Mean Square Residual (SRMR) must be less than 0.10.

3. The inner model is tested to evaluate the significance of the impact of exogenous variables on endogenous variables.

a. A significance test is conducted with the criteria of p-value < 0.05 or T-value > 1.96, which can be observed from the SmartPLS bootstrapping output.

b. The magnitude of the partial influence (f2) can be seen from the output of the SmartPLS algorithm.

c. The magnitude of the simultaneous influence (R2) can be seen from the output of the SmartPLS algorithm.

5. Discussion

Table 1 presents details of the personal characteristics of the participants in this survey.

Table 1
Descriptive Comparison of Respondent Profile between Indonesia (250) and Malaysia (298)

Variables	Indonesia	Malaysia	Variables	Indonesia	Malaysia
Gender			**Industry Sector**		
Male	49.2	34.9	Public Sector	8.5	21.9
Female	50.8	65.1	Private Sector	82.9	73.4
			Not-For-Profit Sector	1.6	4.7
Age			Others	7	0
18 - 24	29.1	3.2			
25 - 29	26.7	11.5	**Firm Age**		
30 - 34	19.4	35.3	Less that 1 year	8.5	0.4
35 - 39	12.8	34.9	'1 - 3	82.9	0.7
40 - 44	6.2	11.9	'4 - 6	1.6	6.1
45 - 49	5	2.2	'7 - 9	7	28.4
50 - 54	0.8	1.1	10 and above	0	64.4

Source: Data processing output

Based on Table 1, it shows that there are more female respondents in both Indonesia and Malaysia than men. This represents that the number of female workers' participation in these two countries is starting to increase. The female labor force participation rate in Indonesia is 53.7% while in Malaysia it is 51.2%. On the other hand, the male labor force participation rate in Indonesia is 81.5%, compared to Malaysia's 77.6% (Santika, 2023). The number of generation Z aged 9 – 24 years in Indonesia (29.1%) is higher than in Malaysia (3.2%). The number of generation Y or millennials aged 25 – 40 years in Indonesia (58.9%) is lower than in Malaysia (81.7%). The number of generation X aged 41 – 56 in Indonesia (12%) is lower than in Malaysia (15.2%). Based on the number of generations, it can be said that generation Z in Indonesia is older, while in Malaysia there is more generation Y. These generational differences give rise to differences in perceptions and responses to the use of technology. Based on the industrial sector, the number of respondents in Indonesia who work in private sector companies compared to the public sector is 9.7 to 1. On the other hand, the composition of private sector workers compared to the public sector in Malaysia is 3.3 to 1. What is interesting is that 82.9 percent of the company's age in Indonesia is between 1 and 3 years old, while 92.8 percent of companies in Malaysia are over 7 years old.

6. Structural Equation Modeling (SEM) Test: Evaluation of the Measurement Model (Outer Model)

The outer model looks at the relationship between latent variables and indicator variables. In this research, a reflective indicator model is used, namely the direction of the relationship or arrow from the latent variable to the indicator which is expected to be correlated between the indicators. If several indicators are removed it does not change the meaning of the latent variable. The outer model is evaluated to present the results of the validity test, which determines the capability of the research instrument. Meanwhile, the reliability test measures a concept and assesses the consistency of respondents' answers to the questionnaire items. The criteria for the convergent validity value are that the loading factor value must be > 0.7 and the Average Variance Extracted value must be > 0.5 to be declared valid. Based on the results of the SEM Outer model test in this study, Convergent validity is the loading factor value for Indonesia, there are indicators that are declared invalid with a value <0.7, namely the indicators CL 6 (0.671), COML1 (0.698), MVL1 (0.682), and MVL2 (0.694). All of these indicators are related to the digital literacy variable. The reliability test is used to measure the consistency of measuring instruments in measuring a concept and to measure the consistency of respondents in answering question items in the research questionnaire which can be seen at the Cronbach's Alpha value > 0.6; rho_A > 0.7; Composite Reliability > 0.7; and an AVE value > 0.5 is declared reliable.

Table 2
Reliability Construct for Indonesia

	Cronbach's	rho_A	Composite	Average Variance
ATT	0.961	0.962	0.965	0.663
CL_	0.966	0.968	0.969	0.588
EMP	0.965	0.967	0.968	0.671
IL	0.955	0.956	0.962	0.736
PEOU	0.946	0.947	0.955	0.702
PU	0.970	0.970	0.973	0.718

Table 3
Reliability Construct for Malaysia

	Cronbach's	rho_A	Composite	Average
ATT	0.961	0.962	0.965	0.663
CL_	0.966	0.968	0.969	0.588
EMP	0.965	0.967	0.968	0.671
IL	0.955	0.956	0.962	0.736
PEOU	0.946	0.947	0.955	0.702
PU	0.970	0.970	0.973	0.718

Source: Data processing output

The loading factor value for Malaysia is > 0.7. Thus, all indicators are declared valid. The reliability test can be seen at the Cronbach's Alpha value > 0.6; rho_A > 0.7; Composite Reliability > 0.7; and an AVE value > 0.5 is declared reliable.

Structural Model Evaluation (Inner Model)

The components of the inner model assessment are the R-Square value, Effect Size f2, Q Square, predictive relevance and Goodness of Fit (GoF) and significance. Rsquare assesses the magnitude of the influence of certain endogenous latent variables on exogenous alternative variables with the criteria if 0.75 (strong); 0.50 (moderate), and 0.25 (weak).

Table 4
Comparison of R^2 and adjusted R^2 between Indonesia and Malaysia

Model	Indonesia			Malaysia		
	R Square	R Square Adjusted	Remark	R Square	R Square Adjusted	Remark
ATT	0.84	0.84	Strong	0.64	0.64	Moderate
EMP	0.82	0.82	Strong	0.7	0.7	Moderate
PEOU	0.82	0.82	Strong	0.68	0.68	Moderate
PU	0.76	0.76	Strong	0.59	0.58	Moderate

Source: Data processing output

The analysis results for Indonesia in Table 4 show that Attitude Towards Use (ATT) can be explained by Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) of 84%, including in the strong category. Employability can be explained by Attitude towards Use (ATT) of 82%, included in the strong category. Perceived Ease of Use (PEOU) can be explained by digital literacy (DL) and information literacy (IL) of 82%, including strong. Perceived Usefulness (PU) can be explained by digital literacy (DL) and information literacy (IL) of 76%, including strong. The analysis results for Malaysia in Table 4 show that Attitude Towards Use (ATT) can be explained by Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) of 64%, including in the moderate category. Employability can be explained by Attitude towards Use (ATT) of 70%, included in the moderate category. Perceived Ease of Use (PEOU) can be explained by digital literacy (DL) and information literacy (IL) of 88%, including moderate. Perceived Usefulness (PU) can be explained by digital literacy (DL) and information literacy (IL) of 58%, including moderate. F-square is used to see whether the influence between variables is large or small with a criterion of 0.02 (small); 0.15 (medium), and 0.35 (large) which means that the latent variable predictor has an influence at the structural level. Below, the F square table for each country.

Table 5
F square value between Indonesia and Malaysia

Indonesia	**ATT**	**CL_**	**EMP**	**IL**	**PEOU**	**PU**
ATT			**0.362**			
CL_			0.137		**0.262**	**0.433**
EMP						
IL			**0.006**		**0.297**	0.050
PEOU	0.137					
PU	**0.861**					

Malaysia	**ATT**	**DL**	**EMP**	**IL**	**PEOU**	**PU**
ATT			**0.159**			
DL			**0.503**		**0.595**	**0.017**
EMP						
IL			**0.005**		0.063	0.076
PEOU	**0.209**					0.126
PU	**0.294**					

Source: Data processing output

Based on Table 5 for Indonesia and Malaysia, a comparison of the effect sizes can be made as follows:

Remark	**Indonesia**	**Malaysia**
Fsquare size effect big	CL_ towards PU PU towards ATT ATT towards EMP	DL towards EMP DL towards PEOU
Fsquare size effect moderate	CL_ towards PEOU IL towards PEOU	ATT towards EMP PEOU towards ATT
Fsquare size effect small	CL_ towards EMP IL towards EMP PEOU towards ATT	DL towards PU IL towards EMP IL towards PEOU IL towards PU PEOU towards PU

In Indonesia, Computer Literacy (CL) on Perceived Usefulness (PU), PU on Attitude towards Use (ATT), and ATT on Employability (EMP) have a big influence. On the other hand, Information Literacy (IL) and CL have a small influence on Employability. Likewise, Perceived Ease of Use (PEOU) has little influence on ATT. In Malaysia, what has a big influence is Digital Literacy (DL) on EMP and PEOU. However, DL has a small influence on PU, as does IL on EMP, PEOU, and PU. Likewise, the influence of PEOU on PU is small. Parth Coefficients are values to indicate the direction of variable relationships. There are two directions of variable relationships, namely positive and negative directions. The following is a table of partial coefficients for each country.

Table 6 shows that the influence between variables in Indonesia is positive. However, the effect of IL on EMP was not significant. The influence between variables in Malaysia for IL on EMP is negative and not significant. The influence between other variables that is not significant is DL on PU. Predictive relevance shows that the model has good predictive relevance or observation value using the blindfolding procedure. A Q2 value > 0 indicates that the model has good predictive relevance or observation value.

Table 6
Path Coefficients for Indonesia and Malaysia

INDONESIA	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
ATT → EMP	0.511	0.508	0.068	7.547	**0.000**
CL_ → EMP	0.361	0.363	0.097	3.717	**0.000**
CL_ → PEOU	0.453	0.451	0.080	5.663	**0.000**
CL_ → PU	0.668	0.672	0.079	8.499	**0.000**
IL → EMP	0.074	0.075	0.086	0.859	**0.390**
IL → PEOU	0.482	0.482	0.084	5.708	**0.000**
IL → PU	0.226	0.221	0.083	2.711	**0.007**
PEOU → ATT	0.270	0.271	0.059	4.578	**0.000**
PU → ATT	0.678	0.675	0.057	11.839	**0.00**

MALAYSIA	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
ATT → EMP	0.330	0.335	0.063	5.247	**0.000**
DL → EMP	0.622	0.618	0.082	7.618	**0.000**
DL → PEOU	0.654	0.652	0.036	18.396	**0.000**
DL → PU	0.157	0.163	0.103	1.529	**0.127**
IL → EMP	-0.059	-0.060	0.070	0.852	**0.395**
IL → PEOU	0.213	0.209	0.048	4.415	**0.000**
IL → PU	0.274	0.265	0.071	3.842	**0.000**
PEOU → ATT	0.395	0.394	0.053	7.413	**0.000**
PEOU → PU	0.404	0.399	0.074	5.445	**0.000**
PU → ATT	0.468	0.463	0.052	8.936	**0.000**

Source: Data processing output

Table 7
Predictive Relevance (Q^2 = 1-SSE/SSO)

INDONESIA	SSO	SSE	Q^2	MALAYSIA	SSO	SSE	Q^2
ATT	3500.000	1578.146	0.549	**ATT**	4172.000	1850.536	0.556
DL	5500.000	5500.000		**DL**	6556.000	6556.000	
EMP	3750.000	1723.575	0.540	**EMP**	4470.000	1858.734	0.584
IL	2250.000	2250.000		**IL**	2682.000	2682.000	
PEOU	2250.000	969.661	0.569	**PEOU**	2682.000	1111.393	0.586
PU	3500.000	1577.467	0.549	**PU**	4172.000	2022.765	0.515

Source: Data processing output

Based on Table 7, the Q2 value is above 0, indicating that all models have good predictive relevance or observation value. The Q square from this research was 0.549 or 54.9%. It can be concluded that this model can explain the information contained in research data by 54.9%. Measures of model suitability in SmartPLS use Standardized Root Mean Square Residual (SRMR), d_ULS and d_G, Normed Fit Index (NFI), and Chi2. The Standardized Root Mean Square Residual (SRMR) is the difference between the sample correlation matrix and the model prediction correlation matrix. This measure allows for assessing the average magnitude of the difference between the observed and expected correlations, serving as an absolute measure of model fit criteria to avoid model specification errors (Henseler et al., 2014). A value of less than 0.08 indicates a fit model, while a value between 0.08 to 0.10 is still acceptable (Hu and Bentler, 1999).

d_ULS is the Squared Euclidean Distance and d_G is the Geodesic Distance used to compare the original value with a confidence interval derived from the sampling distribution. The confidence interval must include the original value, meaning the upper limit of the confidence interval must be greater than the initial value of the d_ULS and d_G criteria to indicate that the model has a "good fit." A model is considered good if the difference between its correlation matrix and the empirical correlation matrix is minimal enough to be attributed solely to sampling error.

The Normed Fit Index (NFI) is calculated as 1 minus the ratio of the Chi-square (Chi^2) value of the proposed model to the Chi-square (Chi^2) value of the null model. As a result, the NFI produces a value between 0 and 1. The closer the NFI is to 1, the better the match. NFI values above 0.9 usually indicate acceptable suitability. The weakness of NFI is that it does not pay attention to model complexity. The more parameters in the model, the greater (better) the NFI results. Chi square tests the relationship or influence of two nominal variables and measures the strength of the relationship between one variable and another nominal variable (C = Coefficient of contingency). Chi square is a statistical test used to test the difference between a theoretical (assumed) distribution and an observed distribution.

Table 8
Goodness of Fit Model

Name of Index	Adequate of Model Fit	Indonesia		Malaysia	
		Saturated Model	Estimated Model	Saturated Model	Estimated Model
Standardized Root Mean Square Residual (SRMR)	< 0.08 model fit	0.05	0.05	0.05	0.05
d ULS (squared Euclidean distance)	P ≤ 0.05	8.98	9.64	7.06	9.63
d G (Geodesic distance)	P ≤ 0.05	6.72	6.84	5.69	5.77
Normed Fit Index (NFI)	≥ 0.9 good fit	0.72	0.71	0.82	0.82
Chi square	< 0.05	7487.33	7517.49	7981.31	8005.62
RMS Theta	≤ 0.1	0.1		0.11	

Source: Data processing output

Table 8 shows the RMS Theta values for Indonesia and Indonesia are 0.1 and 0.11 respectively. Thus, the model in this study has met the criteria for good model fit.

7. Hypothesis Testing

Hypothesis testing uses a significance level of 5% or 0.05, namely with a value of 1.96. If the statistical T value is > 1.96 then it is declared significant and the hypothesis can be accepted. Table 9 shows the hypothesis test of direct influence and indirect influence between variables in Indonesia.

Table 9
Path Coefficient (Direct effect)

INDONESIA	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values
ATT → EMP	0.511	0.508	0.068	7.547	**0.000**
CL_ → EMP	0.361	0.363	0.097	3.717	**0.000**
CL_ → PEOU	0.453	0.451	0.080	5.663	**0.000**
CL_ → PU	0.668	0.672	0.079	8.499	**0.000**
IL → EMP	0.074	0.075	0.086	0.859	**0.390**
IL → PEOU	0.482	0.482	0.084	5.708	**0.000**
IL → PU	0.226	0.221	0.083	2.711	**0.007**
PEOU → ATT	0.270	0.271	0.059	4.578	**0.000**
PU → ATT	0.678	0.675	0.057	11.839	**0**

Source: Data processing output

The direct effect in Table 9 shows that the effect of information literacy on employability (IL →EMP) is not significant. IL shows a person's ability to use and manage information. The insignificance of the IL → EMP relationship is attributed to the low level of IL training preparation. Hence, a standardized IL preparation and training program is essential to improve the IL skills needed by workers in the workplace.

Table 10
Indirect Effect

INDONESIA	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
ATT → EMP					
CL_ → ATT	0.575	0.575	0.067	8.541	**0.000**
CL_ → EMP	0.294	0.293	0.056	5.296	**0.000**
CL_ → PEOU					
CL_ → PU					
IL → ATT	0.284	0.281	0.072	3.946	**0.000**
IL → EMP	0.145	0.142	0.040	3.667	**0.000**
IL → PEOU					
IL → PU					
PEOU → ATT					
PEOU → EMP	0.138	0.138	0.036	3.858	**0.000**
PU → ATT					
PU → EMP	0.347	0.343	0.054	6.411	**0.000**

Source: Data processing output

Table 10 for direct effects shows that all effects are significant. The two biggest influences are computer literacy on Attitude toward Use (CL → ATT) of 0.575 and Perceived Usefulness on Employability (PU → EMP) of 0.347. Individuals with computer literacy (CL) have the technical and operational skills to use technology. CL is the intersection of technical, cognitive, and social-emotional dimensions (Ng, 2012). Knowledge of operating computers in the workplace is a technical dimension. The ability to critically operate a computer, evaluate, and manage information effectively to enhance network

navigation, avoid disorientation, and improve knowledge-building capabilities. The ability to use internal networks while respecting others' privacy and adhering to rules in various contexts and environments as part of social-emotional skills. Thus, CL has an impact on Attitude toward Use (ATT). Perceived Usefulness (PU) shows subjective perceptions regarding technology to improve work performance. Good subjective perception about the use of technology will improve performance. Table 11 shows the hypothesis test of direct and indirect effects between variables in Malaysia.

Table 11
Path Coefficient (Direct effect)

MALAYSIA	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
ATT → EMP	0.330	0.335	0.063	5.247	**0.000**
DL → EMP	0.622	0.618	0.082	7.618	**0.000**
DL → PEOU	0.654	0.652	0.036	18.396	**0.000**
DL → PU	0.157	0.163	0.103	1.529	**0.127**
IL → EMP	-0.059	-0.060	0.070	0.852	**0.395**
IL → PEOU	0.213	0.209	0.048	4.415	**0.000**
IL → PU	0.274	0.265	0.071	3.842	**0.000**
PEOU → ATT	0.395	0.394	0.053	7.413	**0.000**
PEOU → PU	0.404	0.399	0.074	5.445	**0.000**
PU → ATT	0.468	0.463	0.052	8.936	**0.000**

Source: Data processing output

The direct influence in Table 11 shows that the influence of digital literacy on Perceived Usefulness (DL → PU) and information literacy on employability (IL → EMP) is not significant. IL shows a person's ability to use and manage information. The insignificance of IL → EMP in Malaysia is the same as in Indonesia. This problem stems from the inadequate level of IL training preparation. Therefore, a standardized IL preparation and training program is essential to enhance the IL skills required by workers in the workplace.

Tabel 12
Indirect Effect

MALAYSIA	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
ATT → EMP					
DL → ATT	0.456	0.453	0.057	8.047	**0.000**
DL → EMP	0.150	0.152	0.039	3.900	**0.000**
DL → PEOU					
DL → PU	0.264	0.261	0.052	5.038	**0.000**
IL → ATT	0.253	0.246	0.057	4.450	**0.000**
IL → EMP	0.083	0.082	0.024	3.504	**0.000**
IL → PEOU					
IL → PU	0.086	0.084	0.026	3.311	**0.001**
PEOU → ATT	0.189	0.185	0.042	4.529	**0.000**
PEOU → EMP	0.193	0.194	0.042	4.566	**0.000**
PEOU → PU					
PU → ATT					
PU → EMP	0.154	0.155	0.033	4.627	**0.000**

Source: Data processing output

Table 12 for direct effects shows that all effects are significant. The two biggest influences are digital literacy on Attitude toward Use (DL → ATT) of 0.456 and digital literacy on Employability (DL → PU) of 0.264. Individuals with digital literacy (DL) possess the technical and operational skills necessary to utilize technology effectively. DL encompasses the intersection of technical, cognitive, and social-emotional dimensions (Ng, 2012). The technical dimension involves having the knowledge to operate digital tools in the workplace. The cognitive dimension includes the ability to critically operate digital technology, evaluate and manage information efficiently to enhance network navigation, avoid disorientation, and boost knowledge-building capabilities. Ability to use networks and learn to respect other people's privacy and obey rules in different contexts and environments as a social emotional. Thus, DL has an impact on Perceived Usefulness (PU).

8. Conclusion

In Indonesia, Computer Literacy (CL) on Perceived Usefulness (PU), PU on Attitude towards Use (ATT), and ATT on Employability (EMP) have a big influence. On the other hand, Information Literacy (IL) and CL have a small influence on Employability. Likewise, Perceived Ease of Use (PEOU) has little influence on ATT.

The effect of information literacy on employability (IL →EMP) is not significant. IL shows a person's ability to use and manage information. The insignificance of the IL → EMP relationship is due to the low level of IL training preparation. Consequently, a standardized IL preparation and training program is necessary to enhance the IL skills required by workers in the workplace.

Individuals with computer literacy (CL) have the technical and operational skills to use technology effectively. CL encompasses technical, cognitive, and social-emotional dimensions (Ng, 2012). The technical dimension involves operating computers at work. The cognitive dimension includes critically using computers, managing information to improve navigation, and enhancing knowledge-building. The social-emotional dimension involves using networks responsibly, respecting privacy, and adhering to rules in various contexts. Thus, CL impacts Attitude toward Use (ATT).

Perceived Usefulness (PU) shows subjective perceptions regarding technology to improve work performance. Good subjective perception about the use of technology will improve performance.

In Malaysia, what has a big influence is Digital Literacy (DL) on Employability (EMP) and Perceived Ease of Use (PEOU). However, DL has a small influence on PU, as does IL on EMP, PEOU, and PU. Likewise, the influence of PEOU on PU is small.

IL shows a person's ability to use and manage information. The insignificance of IL → EMP in Malaysia is the same as in Indonesia. This situation is due to the insufficient level of IL training preparation. Thus, implementing a standardized IL preparation and training program is crucial to improve the IL skills needed by workers in the workplace.

Individuals with digital literacy (DL) have the technical and operational skills to use technology effectively. DL encompasses technical, cognitive, and social-emotional dimensions (Ng, 2012). The technical dimension involves operating digital tools at work. The cognitive dimension includes critically using digital technology, managing information to improve navigation, and enhancing knowledge-building. The social-emotional dimension involves using networks responsibly, respecting privacy, and adhering to rules in various contexts. Consequently, DL positively impacts Perceived Usefulness (PU).

References

Abedini-Livari, A., Firuzi, K., & Vakilian, M. (2020). Distinguishing polymeric insulators PD sources through RF PD measurement. *IET Generation, Transmission & Distribution*, *14*(21), 4859-4865.

Ahmad, M., Karim, A. A., Din, R., & Albakri, I. S. M. A. (2013). Assessing ICT competencies among postgraduate students based on the 21st century ICT competency model. *Asian Social Science*, *9*(16), 32.

Ajzen, I. (2011). The theory of planned behaviour: Reactions and reflections. *Psychology & health*, *26*(9), 1113-1127.

Ancarani, A., & Di Mauro, C. (2018). Successful digital transformations need a focus on the individual: How does digitalization affect the behaviour of purchasers and team members in related functions?. *Digitalisierung im einkauf*, 11-26.

Bala, H., & Venkatesh, V. (2016). Adaptation to information technology: A holistic nomological network from implementation to job outcomes. *Management Science*, *62*(1), 156-179.

Bawden, D. (2001). Information and digital literacies: a review of concepts. *Journal of documentation*, *57*(2), 218-259.

Bilgihan, A. (2016). Gen Y customer loyalty in online shopping: An integrated model of trust, user experience and branding. *Computers in human behavior*, *61*, 103-113.

Bowen, M. M., & Johnson, K. R. (2019). Entrepreneurial skills for the 21st century workplace: the SME sector. In *Handbook of Research on Promoting Higher-Order Skills and Global Competencies in Life and Work* (pp. 56-69). IGI Global.

Carnevale, A. P., & Smith, N. (2013). Workplace basics: The skills employees need and employers want. *Human Resource Development International*, *16*(5), 491-501.

Cetindamar, D., Abedin, B., & Shirahada, K. (2021). The role of employees in digital transformation: a preliminary study on how employees' digital literacy impacts use of digital technologies. *IEEE Transactions on Engineering Management*.

Chan, A. J., Hooi, L. W., & Ngui, K. S. (2021). Do digital literacies matter in employee engagement in digitalised workplace?. *Journal of Asia Business Studies*, *15*(3), 523-540

Chang, I. C., Lin, P. J., Chen, T. H., & Chang, C. H. (2020). Cultural impact on the intention to use nursing information systems of nurses in Taiwan and China: survey and analysis. *Journal of Medical Internet Research*, *22*(8), e18078.

Colbert, A., Yee, N., & George, G. (2016). The digital workforce and the workplace of the future. *Academy of management journal*, *59*(3), 731-739.

Collard, A. S., De Smedt, T., Dufrasne, M., Fastrez, P., Ligurgo, V., Patriarche, G., & Philippette, T. (2017). Digital media literacy in the workplace: a model combining compliance and inventivity. *Italian Journal of Sociology of Education*, *9*(1), 122-154.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.

Dede, C. (2010). Technological supports for acquiring 21st century skills. *International encyclopedia of education*, *3*, 158-166.

Durodolu, O. (2016). Technology Acceptance Model as a predictor of using information system'to acquire information literacy skills. *Library Philosophy & Practice*.

Eshet, Y. (2004). Digital literacy: A conceptual framework for survival skills in the digital era. *Journal of educational multimedia and hypermedia*, *13*(1), 93-106.

Farrell, L., Newman, T., & Corbel, C. (2021). Literacy and the workplace revolution: a social view of literate work practices in Industry 4.0. *Discourse: Studies in the cultural politics of education*, *42*(6), 898-912.
Fishbein, M., & Ajzen, I. (2011). *Predicting and changing behavior: The reasoned action approach*. Psychology press.
Forster, M. (Ed.). (2017). *Information literacy in the workplace*. Facet Publishing.
Gefen, D., & Straub, D. (2005). A practical guide to factorial validity using PLS-Graph: Tutorial and annotated example. *Communications of the Association for Information systems*, *16*(1), 5.
Gekara, V., Snell, D., Molla, A., Karanasios, S., & Thomas, A. (2019). Skilling the Australian Workforce for the Digital Economy. Research Report. *National Centre for Vocational Education Research (NCVER)*.
Gilbert, S. (2017). Information literacy skills in the workplace: Examining early career advertising professionals. *Journal of Business & Finance Librarianship*, *22*(2), 111-134.
Government of Scotland. 2012. Defining Employability. Communication from the ScottishGovernment and the Scottish Center for Healthy Living (2012), http://www.healthyworkinglives.com/advice/employability/what-is-employability.aspx#definition
Gui, M., & Argentin, G. (2011). Digital skills of internet natives: Different forms of digital literacy in a random sample of northern Italian high school students. *New media & society*, *13*(6), 963-980.
Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and Practice*, *19*(2), 139-152.
Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the academy of marketing science*, *40*, 414-433.
Handley, F. J. (2018). Developing Digital Skills and Literacies in UK Higher Education: Recent developments and a case study of the Digital Literacies Framework at the University of Brighton, UK.
Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, *43*, 115-135
Hess, T., Matt, C., Benlian, A., & Wiesböck, F. (2016). Options for formulating a digital transformation strategy. *MIS Quarterly Executive*, *15*(2).
Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic management journal*, *20*(2), 195-204.
Hunter, I. (2018). Digital literacy in the workplace: A view from the legal sector. *Business Information Review*, *35*(2), 56-59.
Kane, G. (2019). The technology fallacy: people are the real key to digital transformation. *Research-Technology Management*, *62*(6), 44-49.
Kasemsap, K. (2018). Encouraging digital literacy and ICT competency in the information age. In *Encyclopedia of Information Science and Technology, Fourth Edition* (pp. 2253-2263). IGI Global.
Kim, H. W., & Kankanhalli, A. (2009). Investigating user resistance to information systems implementation: A status quo bias perspective. *MIS quarterly*, 567-582.
Kirton, J., & Barham, L. (2005). Information literacy in the workplace. *The Australian Library Journal*, *54*(4), 365-376.
Kodrat, D., Tambunan, D., & Hartono, W. (2024). Investigation of workplace literacy in Indonesia to enhance employability opportunities. *Decision Science Letters*, *13*(2), 351-362.
Kohnke, O. (2017). It's not just about technology: The people side of digitization. *Shaping the enterprise: Trends and use cases in digital innovation and transformation*, 69-91.
König, J., Jäger-Biela, D. J., & Glutsch, N. (2020). Adapting to online teaching during COVID-19 school closure: teacher education and teacher competence effects among early career teachers in Germany. *European journal of teacher education*, *43*(4), 608-622.
Lapointe, L., & Rivard, S. (2005). A multilevel model of resistance to information technology implementation. *MIS quarterly*, 461-491.
Lee, J., & Hsu, Y. C. (2002). Web navigation: The role of metaphor, concept map, and individual differences. In *EdMedia+ Innovate Learning* pp. 1100-1101). Association for the Advancement of Computing in Education (AACE).
Limberg, L., Sundin, O., & Talja, S. (2012). Three theoretical perspectives on information literacy. *Human IT: Journal for Information Technology Studies as a Human Science*, *11*(2).
Lloyd, A. (2003). Information literacy: the meta-competency of the knowledge economy? An exploratory paper. *Journal of Librarianship and information Science*, *35*(2), 87-92.
Marangunić, N., & Granić, A. (2015). Technology acceptance model: a literature review from 1986 to 2013. *Universal access in the information society*, *14*, 81-95.
Marsh, E. (2021). Understanding the effect of digital literacy on employees' digital workplace continuance intentions and individual performance. In *Research anthology on digital transformation, organizational change, and the impact of remote work* (pp. 1638-1659). IGI Global.
Middleton, L., & Hall, H. (2021). Workplace information literacy: a bridge to the development of innovative work behaviour. *Journal of Documentation*, *77*(6), 1343-1363.
Mietzner, D., & Kamprath, M. (2013). A competence portfolio for professionals in the creative industries. *Creativity and innovation management*, *22*(3), 280-294.
Mohammadyari, S., & Singh, H. (2015). Understanding the effect of e-learning on individual performance: The role of digital literacy. *Computers & Education*, *82*, 11-25.

Naveed, M. A., & Rafique, F. (2018). Information literacy in the workplace: a case of scientists from Pakistan. *Libri*, *68*(3), 247-257.

Ng, W. (2012). Can we teach digital natives digital literacy?. *Computers & education*, *59*(3), 1065-1078.

Nikou, S., De Reuver, M., & Mahboob Kanafi, M. (2022). Workplace literacy skills—how information and digital literacy affect adoption of digital technology. *Journal of Documentation*, *78*(7), 371-391.

Oman, J. N. (2001). Information literacy in the workplace. *Information outlook*, *5*(6), 32.

Outlook, O. S. (2015). Youth, skills and employability.

Panel, I. L. (2002). Digital transformation: A framework for ICT literacy. *Educational Testing Service*, *1*(2), 1-53.

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual review of psychology*, *63*(1), 539-569.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, *88*(5), 879.

Raish, V., & Rimland, E. (2016). Employer perceptions of critical information literacy skills and digital badges. *College & Research Libraries*, *77*(1), 87-113.

Renta-Davids, A. I., Jiménez-González, J. M., Fandos-Garrido, M., & González-Soto, Á. P. (2014). Transfer of learning: Motivation, training design and learning-conducive work effects. *European Journal of Training and Development*, *38*(8), 728-744.

Santika. Erlina F. (2023). Tingkat Partisipasi Angkatan Kerja Negara-negara ASEAN (2021), Kompas, 31 Januari 2023. https://databoks.katadata.co.id/datapublish/2023/01/31/tingkat-partisipasi-angkatan-kerja-laki-laki-dan-perempuan-di-negara-asean-berapa-capaian-indonesia

Sarstedt, M., Ringle, C. M., & Hair, J. F. (2021). Partial least squares structural equation modeling. In *Handbook of market research* (pp. 587-632). Cham: Springer International Publishing.

Schulte, S. J., & Knapp, M. (2017). Awareness, adoption, and application of the Association of College & Research Libraries (ACRL) Framework for Information Literacy in health sciences libraries. *Journal of the Medical Library Association: JMLA*, *105*(4), 347.

Selvaganapathi, R., & Raja, V. P. (2012). Technophobia of higher secondary school teachers. *International journal of teacher educational research (IJTER) Vol*,*1*.

Simao, L., & Franco, M. (2018). External knowledge sources as antecedents of organizational innovation in firm workplaces: a knowledge-based perspective. *Journal of Knowledge Management*, *22*(2), 237-256.

Somerville, M. M., Imhof, R., Bruce, C. S., & Abdi, E. S. (2018). Workplace information literacy: Co-designed information experience-centered systems and practices. In *Information Literacy in the Workplace: 5th European Conference, ECIL 2017, Saint Malo, France, September 18-21, 2017, Revised Selected Papers 5* (pp. 3-10). Springer International Publishing.

Sousa, M. J., & Rocha, Á. (2019). Skills for disruptive digital business. *Journal of Business Research*, *94*, 257-263.

Stordy, P. (2015). Taxonomy of literacies. *Journal of documentation*, *71*(3), 456-476.

Thompson, K. M., Jaeger, P. T., Taylor, N. G., Subramaniam, M., & Bertot, J. C. (2014). *Digital literacy and digital inclusion: Information policy and the public library*. Rowman & Littlefield.

Tinmaz, H., Fanea-Ivanovici, M., & Baber, H. (2023). A snapshot of digital literacy. *Library Hi Tech News*, *40*(1), 20-23.

Urena, R., Kou, G., Dong, Y., Chiclana, F., & Herrera-Viedma, E. (2019). A review on trust propagation and opinion dynamics in social networks and group decision making frameworks. *Information Sciences*, *478*, 461-475.

Van Deursen, A. J., & Van Dijk, J. A. (2014). *Digital skills: Unlocking the information society*. Springer.

Van Laar, E., Van Deursen, A. J., Van Dijk, J. A., & De Haan, J. (2017). The relation between 21st-century skills and digital skills: A systematic literature review. *Computers in human behavior*, *72*, 577-588.

Vial, G. (2021). Understanding digital transformation: A review and a research agenda. *Managing digital transformation*, 13-66.

Vrana, R. (2016). Digital literacy as a boost factor in employability of students. In *Information Literacy: Key to an Inclusive Society: 4th European Conference, ECIL 2016, Prague, Czech Republic, October 10-13, 2016, Revised Selected Papers 4* (pp. 169-178). Springer International Publishing.

Yoon, H. Y. (2016). User acceptance of mobile library applications in academic libraries: an application of the technology acceptance model. *The Journal of Academic Librarianship*, *42*(6), 687-693.