

Learning Lessons for Indonesia Regarding the Empowerment of Women Through Digital Literacy

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ABSTRACT

Despite the fact that the number of men and women in the world's population are about identical, women have not yet achieved equality with their counterparts in many aspects, including the ability to use digital technology. The necessity of women having a strong understanding of digital technology is a strategic problem that should be considered in light of its impact, which has the potential to exacerbate the existing disparity between men and women. This applies to Indonesian women as well. Recent research has indicated that the digital revolution has worsened gender inequality. Rural women suffer considerably more. Theoretical and empirical calculations reveal that this state threatens the effectiveness of strategic goals like democratization towards consolidation, national development, and international agendas like the SDGs. This study will focus on Indonesian women's digital literacy challenges. This work uses theory-driven approach. The data was gathered after a comprehensive meta-analysis of several relevant studies. This study, unlike others, will also analyze the experiences of several nations that have faced comparable difficulties and successfully overcome the problems, and how they may be used in Indonesia. Thus, Indonesian women's digital literacy issues would be better understood and addressed. This study should help empower Indonesian women in numerous fields.

Keywords: Women Empowerment, Digital Literacy, Indonesian Women, Gender Equality

INTRODUCTION

Although women make up nearly half of the world's population, they have not been as fortunate as men in many areas of decision making (Ali et al., 2023). Jacobsen (2011) in her Assessment Paper, for example, affirms this condition by saying that those sectors include economy wherein there are lesser woman in the formal work sector than men, hence women are prone to live in poverty and have larger share in doing household's works. Likewise, according to International Labour Organization (ILO) gender imbalances are still alarming and remained almost unchanged for two decades (ILO, 2023). In addition, similar claim also conveys by Mahata et al. (2023) with regard to gender inequality particularly in developing economies.

By the same token, political sector also less favourable to women in which there are less women's representation in elected offices as well as in political and corporate appointments (Jacobsen, 2011). This issue has long been highlighted by many scholars and feminists such as Paxton et al.(2006), Paxton et al. (2010), Childs and Krook (2008),Campbell et al. (2010), Celis and Childs (2020), and Childs and Krook (2006). It is basically argued that women under representation is considered to be the tangible sign of gender inequality in politics. In this matter, UN Women (2023) highlights that the problem still persists at all levels of decision-making worldwide and there is still a long way to go to achieve gender equality in political life.

No less worrisome in today's era of extraordinary advances in information and communication technology, gender inequality has also hit this sector, as many studies have shown that women are still lagging far behind men. As reported by the OECD (2018) for example, significant gender gap between men and women is still present today in the access, use, and ownership of digital technologies in many G20 economies and beyond. The gaps are particularly experienced by women in the Third World countries, as well as in rural area, less educated, and among the elderly(Antonio & Tuffley, 2014; Del-Moral & Villalustre, 2013). Although many women now have access to digital technology, this access is not evenly distributed (Dunkerly-Bean & Crompton, 2016; Singh, 2017).

In addition to the problem of access to digital technology, women who already have access to digital technology still face other problem that are no less complicated, namely related to digital literacy competencies. According to Gilster (1997, in Feerrar, 2019) for instance,¹ digital literacy is “the ability to access networked computer resources and use them.” Gilster (1997, in Feerrar, 2019) emphasizes two important components in digital literacy, namely the tool access and digital skill. Furthermore, by highlighting that digital literacy involves mastering ideas, Gilster (1997, in Feerrar, 2019)then defines digital literacy ass “the ability to understand and use information in multiple formats [...] when it is presented via computers”. Within this definition, it is emphasized that digital literacy involves the critical thinking abilities particularly in understanding and judging on-line information. In this matter, studies

confirm that women are still lagging behind men (C. I. C. Lin et al., 2012; OECD, 2018; Purohit et al., 2015; Singh, 2017; Svetlik & Bacikova, 2015). According to Dighe and Reddi (2006), from approximately 771 billion globally who are digitally illiterate, the majority is women and almost all come from the poorest parts of society. By the same token, Kuo et al. (2013) in their study and also Tyers-Chowdhury and Binder (2021) confirm that women face difficulties and lack of skills in utilizing digital technology optimally. Women tend to use limited range of digital services and even then, they do not use the frequently (Tyers-Chowdhury & Binder, 2021).

The impact of women's lack of digital literacy is not trivial. It is widely believed that digital literacy is a necessary ability in today's information culture for professional and career growth, lifelong learning and distant education, freedom of expression and opinion, and social inclusion (Eshet-Alkalai, 2004; Ezziane, 2007; Horton Jr, 2007; Tyers-Chowdhury & Binder, 2021). Hence, illiteracy in this aspect has caused most women lag behind men in various fields such as education, employment, health, economy, politics, and welfare (Kuo et al., 2013; Purohit et al., 2015). To some extent, Indonesian women are not an exception in this matter.

Over the last decade Internet use in Indonesia has increased dramatically as can be seen in Figure 1. Latest data from Central Bureau of Statistics (BPS, 2022) shows that the figure increase to 66.46 percent. However, many Indonesia women have not utilized digital media or internet effectively (Suwana & Lily, 2017).

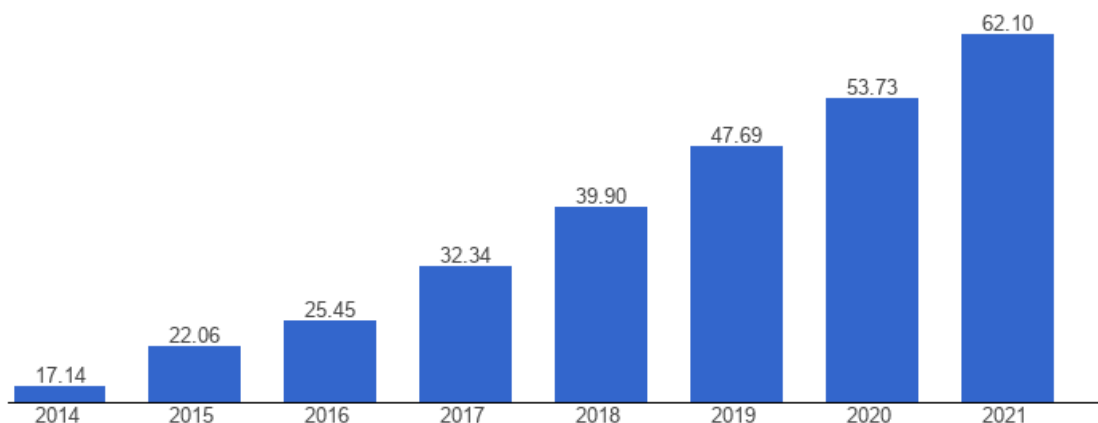


Figure 1 Indonesia: Internet Users

Source: The Global Economy (2021)

Suwana and Lily (2017) further assert that gender digital divide exists wherein women have not been able to access the internet in an equitable manner and make optimal use of communication and information technology compared to men. Similar assertion is also

confirmed by a survey conducted by the World Wide Web Foundation (2018) that there is a large gender gap in the digital space in Indonesia. Only 26% of Indonesian women express opinions online to seek critical information about women's rights, and only 5% of those women use the internet to express their views in order to obtain information on the website as support for obtaining equal rights, according to Dedy Permadi, Special Staff of the Minister of Communication and Information for Digital Literacy (as cited in Hope, 2022). In addition, Indonesia women tend to access social media. Center for Digital Society (CfDS) of Gadjah Mada University's study (2019) shows, for instance, that this is due to reasons such as women tend to perceive that there are no benefits for them to obtain from accessing and utilising internet. Another reason is that using the internet is difficult. Furthermore, women do not have time to learn because their time is limited owing to domestic responsibilities.

As many have highlighted (Galpaya & Zainudeen, 2022; World Bank, 2016), limited access to digital technology may limit women's ability to obtain optimum benefits from technology. Access networks, resources, possibilities for employment, voice, and agency are a few examples of this. In turn, such condition may exacerbate women inequality in many sectors as technology becoming increasingly central to all spheres of life. Women who are unable to take advantage of these benefits run the risk of being doubly excluded from both digital services and other essential services that depend in some way or another on digital access, such as government services and e-commerce. According to research, they may have even more trouble managing their life than people did before the advent of digital technology (Scott et al., 2017; World Bank, 2016). What is more, this issue will hurt not only specific women but also society as a whole. In this regard, Indonesian women are not an exception. Considering the above explanation, this article will discuss how Indonesia can learn from other countries' experience to improve and strengthen women's digital literacy.

After the introduction, the next section is literature review followed by the research method,. Discussion on some current digital literacy challenges faced by Indonesia women will be the next topic. Best practices that have been implemented in various nations will then be discussed, along with the possibilities of applying them to Indonesia to help Indonesian women become more digitally literate. Short closing remarks will be provided at the end of this article.

LITERATURE REVIEW

Digital Literacy: Its Meanings and Importance

The concept of digital literacy has become prevalent in the 21st century. Its existence is a result of the digital technology revolution, which has affected practically every aspect of human life. These advancements influence not just the technological methods of communication between persons, but also how they learn, form relationships with others, engage in economic activity, take part in politics, and even look for resources to address problems (Rahayu, 2021b).

With reference to the opinion of a number of experts, Rahayu (2021b) points out that there are at least two distinct viewpoints exist in relation to the quick advancement of digital technology in the form of internet and digital media. The first one is this positive or optimistic perspective wherein digital technology has improved social interaction, education, productivity, and people's welfare. The other one is more pessimistic or negative perspective in digital technology because of the problems it creates, including cyberbullying, addiction to the internet, exploitation, fraud, and conflict. Regarding these viewpoints and the rapidly increasing reliance on digital technology, it's critical to consider how people use it, how they interact online, and what skills they need to do occupations associated with digitalization. In essence, it is widely expected that the remarkable advancements in digital technology will be for the benefit of humanity. However, it cannot be refuted and has even been demonstrated that these advances also have the potential to have negative effects. Within this context, digital literacy become crucial.

Digital literacy has been defined differently by many parties. Introduced for the first time by Paul Gilster in 1997 to refer to an ability to understand and to use information from various digital sources in the era of digital age (Bawden, 2008; Feerrar, 2019). In Gilster words, it is about "mastering ideas, not keystrokes". Hence, it is not merely technical skill, but more than that, it is also about cognition of what is seen in the computer. According to Gilster, digital literacy constitutes four core components, namely internet searching, hyper-text navigation, knowledge assembly, and content evaluation (as cited in Bawden, 2008).

Before Gilster popularises digital literacy concept, the concepts of information literacy and computer literacy were already the subject of a sizable body of writing and real-world experience (Bawden, 2008). Both of these phrases—along with synonyms like "IT literacy"—were first used to describe a set of specialized abilities required for discovering and using information in computerized form. According to Bawden (2008), this understanding of information literacy extends the skills-based computer literacy model a little by incorporating softer skills like information evaluation and need recognition, but it is still a fairly prescriptive and formulaic approach, based on the assumption of a formally expressed information need.

Bawden (2008) further points out other similar broad concepts which combine general knowledge and attitude with specific skills also introduced by scholar under terms network literacy, *informacy*, and mediacy. The first is synonymous with "Internet literacy" and focuses on digital information in networked form; the second denotes traditional literacy plus information literacy; and the third highlights the capacity to work with digital information across a range of media.

Ala-Mutka (2011) states that many of the information, abilities, and attitudes indicated in the concepts discussed above are included in the concept of digital literacy. For this reason, Bawden (2008) asserts that "Digital literacy touches on and includes many things that it does not claim to own". A definition of digital literacy offers by Martin (2006, as cited in Rahayu, 2021b) with his basic premise that digital literacy encompasses complex capabilities which not

only referring to technical capabilities, but also ability to process digitally sources. In his words, Martin defines digital literacy as

“...the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analysed and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, in order to enable constructive social action; and to reflect upon this process.”

From Martin's definition, it is clear that digital literacy encompasses a wide range of skills. In this matter Bawden (2008) explains about four components as the main character of digital literacy concept. *First*, the basic components which include literacy *per se* and ICT literacy. *Second*, background knowledge components which refer to having a firm grasp of the new forms of information and how they fit into the overall context of digital information prior to becoming digitally literate. *Third*, central competencies which consists of reading and understanding digital and non-digital formats; creating and communicating digital information; evaluation of information; knowledge assembly; information literacy; and media literacy. Without these fundamental knowledge and abilities, any claim of digital literacy must be taken sceptically. *Fourth*, attitudes and perspectives components, which refer to the relevance of having a moral foundation in addition to having skills and competencies. This last competency differentiates digital literacy from other literacy because digital literacy is oriented towards transformation and social responsibility.

Other scholars distinguish between functional competence and critical competence as the two categories of digital literacy (Bawden, 2008; Buckingham, 2015; Chen et al., 2011; T. Lin et al., 2013). The former refers to the capacity to use technology, such as using browsers, hyperlinks, or search engines to find information online. While the latter refers to the capacity to evaluate digital media critically, including through challenging the veracity of information, the motivations of message creators, and the ways in which media or information depicts social reality. This skill enables people to convert information into knowledge (Buckingham, 2015). In this matter, Martin and Grudziecki provide a rather comprehensive definition of digital literacy as follow,

Digital Literacy is the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyze and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, in order to enable constructive social action; and to reflect upon this process.

In a nutshell, it is more than just technical expertise. It refers to the knowledge, abilities, and attitudes that allow a person to feel safe, secure, and powerful in an increasingly digital world.

Numerous academics have emphasized the importance of digital literacy. Individuals and society as a whole, according to Egeli and Sadiç (2021) for example, need to have

sufficient knowledge on different technologies and the ability to use them correctly and optimally, including accessing the right information in the digital environment, producing the right information, being aware of the right information, and using technology in the learning-teaching process. In addition to the many benefits that are useful for human life, the extraordinary advances in information technology today also bring with them the potential for negative impacts that can damage the joints of human life at the same time. According to Çubukçu and Bayzan (2013, as cited in Egeli & Sağdıç, 2021), the most important component in the development of internet dangers is the creation and dissemination of flawed, abusive, and misleading information. In this circumstance, the concept of digital literacy becomes important. In the digital society generated by the rapid growth of digital technologies digital literacy is one of the most crucial pillars of digital citizenship (Ribble 2011, as cited in Egeli & Sağdıç, 2021; Shafira & Rahayu, 2021).

Moreover, it is widely held that in order to actively engage in contemporary society, it is imperative for every individual to possess digital literacy skills. According to Polizzi (2020), a crucial aspect highlighted is the necessity for individuals to possess digital literacy in order to actively participate in civic and political affairs. This is due to the fact that the internet and digital media platforms present a range of possibilities and limitations within contemporary democratic practices. It is imperative for all individuals to adopt a critical digital citizenship stance, as the influence of technology on democracy, civic engagement, and political participation is profound. Therefore, it is imperative to consider critical digital literacy as a collection of vital competencies, knowledge, and understandings that are crucial for engaging in democratic processes and fostering social integration within the digital era.

Digital literacy also has become a vital ability required for entering the professional world in today's technology-driven culture; otherwise, people will be left behind in different facets of their lives (Pangrazio, 2016). As a competency, digital literacy is needed as communication and access to information increase significantly through digital technology (Shafira & Rahayu, 2021). Furthermore, because most occupations involve technology expertise, people with digital literacy skills are required to keep firms and workforces competitive (STAMMER.com, 2020).

Women and Digital Literacy

As previously elucidated, extensive research conducted in various nations has consistently demonstrated that women exhibit a lower level of engagement with digital media compared to men (Antonio & Tuffley, 2014; Del-Moral & Villalustre, 2013; Dunkerly-Bean & Crompton, 2016; OECD, 2018; Singh, 2017). The disparity between women and men extends beyond mere access to technology, encompassing its utilization as well. Purohit, Bharti, and Joshi (2015) argue that a range of limits and disadvantages have resulted in the marginalization of women across multiple domains, including education, work, health, economy, welfare, and politics. According to Kuo (2013), it is argued that the rise of the internet and social media does not yield significant benefits for women. Women in fact often find themselves

disproportionately affected by the digital gap, particularly in developing countries (Acilar & Sæbø, 2023).

In order to address the aforementioned disparity, digital literacy is perceived as a potential means of bridging the divide (Ertl & Helling, 2011; Suwana & Lily, 2017). Kurnia (2021) defines digital literacy as the capacity to effectively utilize digital media, comprehend its application for certain objectives, and critically assess the communication process, including communications transmitted by communication technology devices. Furthermore, it is imperative for digital literacy to possess the capacity to significantly influence individuals' daily lives, hence enhancing the efficiency and effectiveness of people engaging with digital media.

In similar vein, Kusumastuti and Nuryani (2020) define digital literacy as one's capacity to comprehend, analyse, and process information from digital sources. The capacity in turn enables individuals to effectively utilise digital devices and facilities. This encompasses the capacity to appropriately identify, access, manage, integrate, evaluate, analyze, and synthesize digital resources. Furthermore, digital literacy empowers individuals to generate new knowledge, engage in media creation, and communicate with others within specific contexts. By doing so, individuals are able to initiate positive social actions and engage in critical thinking regarding the advantages and disadvantages associated with digital technologies.

Ertl and Helling (2011) argue that the importance of digital literacy as a fundamental ability in contemporary society suggests the need for an equitable approach to ensure equal opportunities for all individuals in acquiring this talent. All individuals should be afforded equitable opportunities to cultivate advanced skills in digital literacy. Nevertheless, Ertl and Helling further contend that there exists substantiated evidence pertaining to prevailing gender disparities in relation to digital literacy (see, also T. Lin et al., 2013; Purohit et al., 2015; Singh, 2017; Svetlik & Bacikova, 2015). Consequently, the disparity in digital abilities and literacy across genders continues to be a significant obstacle for girls and women in accessing various economic prospects, essential health-related information, and broader social and civic involvement (Gattorno et al., 2022).

Sociocultural factors are significant contributors to the existence of the digital literacy gap (Antonio & Tuffley, 2014). The issue pertaining to women's ability to access digital resources is not primarily rooted in the medium itself, but rather in the social context in which women find themselves. The primary factors contributing to the gender gap in digital literacy include the absence of autonomy, disparities in educational opportunities, and the notion of women encountering insecurity within digital environments (Gattorno et al., 2022; OECD, 2018). In similar vein, the study conducted by Mumporeze and Prieler (2017) examined the diverse factors that contribute to the gender digital divide in Rwanda. The researchers have identified a range of social, economic, and cultural issues that serve as the fundamental causes for the obstacles encountered by women in their efforts to access information and

communication technologies (ICTs). The characteristics encompassed in this study comprise of lower self-worth and self-confidence, insufficient educational background, substantial home obligations, and computer fear. Similar to the aforementioned findings, Potnis (2016) asserts that social and economic disparities significantly impede women's access to mobile phone ownership. The economic hurdles faced by women participating in the study in India were influenced by various cultural factors. These elements include the significant power distance between men and women, the gender roles prescribed by Indian society for women, the tendency of women to shun ambiguity, and the prevalence of collectivistic practices. According to Hofstede (2011) power distance is a cultural characteristic that pertains to the degree to which individuals within organizations and institutions, such as families, acknowledge and anticipate the unequal distribution of power.

Another concerning element is lower level of education. Tyers-Chowdury and Binder (2021) assert that a significant factor contributing to the gender digital divide is low level in educational attainment (see, also Davaki, 2018; OECD, 2018). In fact, by referring to Melhem et al., Antonio and Tuffley (2014) assert that about two-thirds of the world's illiterate population are women. This has led to women's lower levels of digital literacy and a lack of confidence. A further effect is limited digital adoption and use.

Related to the low level in education, Davaki (2018) argues that poverty is considered as another factor affects women's digital literacy. According to Bach, Wolfson and Crowell (2018) poverty is related to digital exclusion, and in turn, social and economic exclusion. In similar vein, recent COVID-19 crisis has worsened the poverty experienced by women and girls with lower socio-economic status. The crisis has further reduced women's financial ability to cope with sudden and rapid digitation of our working and living environments. The condition is more severe for girls with disabilities as well as elderly women (Alisjahbana, 2021). In turn, the crisis has worsened gender inequalities in terms of digital literacy (EQUINET, 2020; World Wide Web Foundation, 2018).

Thus, research shows women have lower engagement with digital media compared to men, impacting various domains like education, work, health, economy, welfare, and politics. Digital literacy is seen as a potential solution, but an equitable approach is needed. Sociocultural factors, such as lack of autonomy, educational disparities, and perceived insecurity, contribute to the digital literacy gap. Economic hurdles, such as power distance and collectivistic practices, further impede women's access to digital resources.

METHODOLOGY

In order to discuss the answers to the proposed question, this study employs qualitative meta syntheses or qualitative meta-analyses research method. This research method enables the aggregation of information and the discovery of various patterns from a number of pertinent primary investigations (Levitt, 2018). The first search for data sources was conducted through

Mendeley library with the keywords women political empowerment, digital literacy, women digital literacy, Indonesian women digital literacy. Other source searches were also carried out by checking the references of the sources that had been obtained. After finding a group of original research papers, converting primary findings into the basic units of data for a meta-analysis, generating categories or themes, and conveying findings are the essential steps in this qualitative meta-analysis process.

FINDINGS AND DISCUSSIONS

Digital Literacy Challenges Faced by Indonesian Women

Data shows that up to 2019 the availability and infrastructure for Internet connectivity in Indonesia remain limited, since the proportion of individuals utilizing the Internet has yet to surpass 50 percent of the country's population. The insufficiency of infrastructure in terms of facilities and equipment, particularly in rural regions, is the primary cause of this issue (Suwana & Lily, 2017). Although there has been significant expansion in internet usage within Indonesia over the past decade, a notable gender disparity persists among Indonesian internet users, as a considerable number of Indonesian women continue to lack proficiency in effectively utilizing digital media or the internet (Marini et al., 2020; Suwana & Lily, 2017). It is confirmed by the Minister of Women's Empowerment and Child Protection who stated that the field of ICT in Indonesia is still dominated by men and women are still considered as just objects (Farida et al, 2011 as cited in Suwana & Lily, 2017).

According to World Wide Web Foundation Report (2018), the gender disparity in the digital sector is considerable in Indonesia. On average, a mere 20% of women in Indonesia has internet connectivity, and within this subset, a mere 26% engage in online discourse to acquire crucial knowledge pertaining to women's rights. Furthermore, a little 5% of these individuals utilize the internet as a platform to voice their perspectives and obtain information from websites that advocate for gender equality.

Additional research findings support the notion that Indonesian women, who possess internet connectivity, predominantly employ it for recreational purposes and social interaction via popular online platforms like Facebook, Instagram, and YouTube, rather than utilizing it as a means for empowerment or enhancing productivity (Riyanto, 2019). According to data from Central Bureau of Statistics, Indonesian women spend 79.92 percent of the internet they access on social media (as cited in Pratnyawan, 2018). Thus, the issue at hand encompasses not only restricted technological accessibility, but also a deficiency in utilizing that technology in a manner conducive to productivity and empowerment.

The aforementioned issue is closely related to the issue of the current deficiency in digital literacy among Indonesian women. In essence, the acquisition of digital literacy necessitates the integration of technical and cognitive proficiencies, enabling individuals to utilize digital media platforms proficiently and optimally. The issue above clearly represents

one of the indicators that pose a challenge to the achievement of digital literacy of Indonesia women today.

The prevalence of cyber violence, sexual harassment, exploitation of women, online prostitution, human trafficking, and other crimes in which women are used as objects is an additional crucial indicator of the low digital literacy of Indonesian women (Setianto, 2021). According to the 2015 World Wide Web Foundation Report, seven out of ten women aged 18 to 24 who routinely use the internet have experienced cyber violence (as cited in Setianto, 2021). In addition, Online Gender-Based Violence (KBGO) is the most reported violence to LBH Apik Jakarta from November 1, 2020, to October 30, 2021 with a total of 489 cases (Puspita, 2021) Likewise and no less worrying is the increasing trend of online violence. In 2020 there were at least 620 cases of complaints submitted to SAFEnet, and a similar number also submitted to the National Committee for Women (Prambadi, 2021). These various issues demonstrate that women can become victims of negligent parties if they lack the ability to access, analyze, evaluate, and create internet content securely.

Moreover, the massive spread of hoaxes and hate speech in recent years as a result of the pervasive use of social networking sites and digital conversations has made Indonesian women susceptible to hoaxes and hate speech, and even has contributed to their propagation (Monggilo, 2021). This is attributed to their lack of comprehension regarding the veracity of the content they consume, generate, or disseminate on social media platforms. This lack of knowledge is frequently driven by a strong aversion towards an individual or entity (Adiputra, 2021). These include the phenomenal case of Ratna Sarumpaet's lie that she was beaten by the authorities, hate speech circulated by two soldiers' wives which ended with the dismissal of their respective husbands from their duties, and no less phenomenal is with regard to hoax circulated by Veronica Koman, a Human Rights activist. Koman through the dissemination of false information pertaining to the Papuan student dormitory riot in Surabaya in August 2019, contributed to the destabilization and compromised security of the nation (Monggilo, 2021).

The issue of inadequate digital literacy among women in Indonesia is further evidenced by the growing incidence of various problems, including instances of personal data privacy violations resulting in online fraud (Hendarto, 2019; Leona, 2021; Sinombor & Dany, 2020), as well as incidents of women becoming victims to fintech lending (Prayitno, 2021; Wahyudi, 2019). In such instances, it is commonly observed that women tend to exhibit a limited capacity for comprehending the potential hazards associated with the dissemination of content including personal information that is unsuitable for public disclosure.

Several indicators pointing to the low level of digital literacy among women in Indonesia are associated with several underlying factors. Similar to what has been argued by a number of scholars in previous section (Antonio & Tuffley, 2014; Davaki, 2018; Gattorno et al., 2022; Potnis, 2016; Tyers-Chowdhury & Binder, 2021), one of the most significant factors is to education, as numerous women face illiteracy mostly owing to limited access to education and knowledge. Additionally, unequal training opportunities in information and

communication technology (ICT), restricted time availability, and low economic and financial resources contribute to this issue (Kurnia, 2021; Marini et al., 2020; Setianto, 2021).

Another factor that is as intricate is the prevalence of patriarchal culture. The patriarchal culture has traditionally associated men with responsibilities and roles that extend beyond the confines of the household, while women have been primarily associated with domestic tasks, such as childcare. The impact on individuals to engage with technology is rooted on the perception that technology is an inherent aspect of men's responsibilities and falls within the realm of masculinity. As a consequence, if there is chance at all, women are placed second in line to benefit from technology (Sambuli, 2017; Suwana & Lily, 2017).

Lessons from Others

Weak digital literacy is a problem faced by women globally (Kuo et al., 2013; Svetlik & Bacikova, 2015). Whereas according to experts, digital literacy is an essential skill that individuals must possess in order to navigate and thrive in the contemporary era of the 21st century. There is a prevailing anticipation that in order to foster economies and communities that are both sustainable and inclusive, it is imperative for individuals of both genders to possess the ability to effectively utilize the opportunities presented by the digital transition. However, women continue to trail behind men. Ultimately, this limited access to devices contributes to women using fewer digital services.

In addressing the aforementioned issue, several nations have implemented diverse ways to facilitate women's acquisition of digital literacy. According to Njenga (2018), digital literacy is often seen as a process of empowerment that enables individuals to effectively utilize digital tools, while also harnessing the benefits of positive results and mitigating potential negative repercussions. Considering the aforementioned causes of lower level of women's digital literacy, the experience of several countries shows that the following strategies have been successful in improving women's digital literacy in their respective countries.

Firstly, to address the issue of limited access to digital technology, a viable and efficient solution could involve the provision of affordable and accessible digital technology and infrastructure, with a special focus on rural and isolated locations as well as some parts of urban areas. This proposed approach entails the provision of internet connectivity, mobile phones, and computers to women within their households and localities. Therefore, it is imperative to allocate greater resources towards enhancing technological infrastructure and implementing favourable regulations that promote accessibility and affordability of internet and mobile markets for women residing in the aforementioned geographical regions.

What has been done by the Government of Pakistan in this matter is quite inspiring. The Government of Pakistan has implemented a range of measures aimed at enhancing the accessibility, digital literacy, and capacity development of women inside the nation. A notable endeavour is the Digital Pakistan strategy introduced in 2018, with the objective of enhancing

digital infrastructure, expanding digital technology accessibility, and fostering digital skills and innovation nationwide. The strategy encompasses many initiatives such as the supply of broadband internet services to places that have limited access, the construction of centers dedicated to fostering innovation, and the promotion of digital skills training and education specifically targeting women and other marginalized groups. Furthermore, the Universal Service Fund (USF) is a governmental endeavour with the objective of facilitating internet connectivity in the rural regions of Pakistan. This effort has successfully facilitated internet connectivity for a substantial population of 3.3 million individuals residing in more than 1,000 rural villages (Akram, 2023).

In addition, the Government of Pakistan has additionally declared numerous policy steps aimed at facilitating the integration of technology in order to promote financial inclusion. In the fiscal year 2021-2022, the government made an official declaration regarding the decrease in taxes imposed on mobile phones and other digital devices. This measure is expected to contribute to the enhanced affordability and accessibility of such items for low-income areas. Consequently, this has empowered women residing in these regions to effectively engage with and utilize digital technologies (Akram, 2023).

In similar vein, Argentina and South Africa, for instance, use universal service funds to support ICT access for women and girls; Canada included in its Budget 2017 a new Affordable Access programme assisting service providers to offer low-cost home Internet packages to interested low-income families; and Australia offers female customers incentives to encourage adoption of ICTs (e.g. discounts on mobile devices). Alternately, some nations pursue broadband for all and international development programs to provide Internet access to women, in particular (OECD, 2018).

Secondly, giving internet access and equipment is one thing, however, access to qualified education and training is another. Enabling women's inclusion in digital technology is undeniably a crucial initial measure. Ultimately, it is imperative to complement this crucial measure with additional strategic actions that take into account the diverse challenges encountered by women in this industry. Thus, in enhancing digital literacy and narrow the digital divide, physical resources alone are insufficient (Hargittai, 2003).

One of the strategic measures involves emphasizing the significance of equipping women with the knowledge and skills necessary to maximize the potential advantages while mitigating any drawbacks associated with digital technology. Another inspiring activity in this matter can be seen from India's good practice. It is believed that empowering women and girls with digital abilities would enable them to utilize digital technologies effectively. Basic digital literacy initiatives can assist women and girls in using technology to enhance their education, career possibilities, and overall well-being (d4dhub.eu, 2023).

With the goal of expanding opportunities for women to take more ownership of their lives and improve their economic well-being, Google and Tata Trusts deployed an innovative

model of training called Internet Saathi for women in India's rural areas in 2015. It focuses on the development of local women trainers, referred to as Internet Saathis, who are responsible for instructing other women on the utilization of the internet. The Internet Saathis also helps to dismantle social barriers that impede the progress of women in these regions.

This technique facilitates the empowerment of rural women by enabling them to assume the role of trainers, so contributing to the dismantling of social barriers that impede the progress of women in these regions. The initiative has had significant growth, reaching a total of over 15 million women residing in over 150,000 villages. Impressively, a substantial majority, namely over 80 percent, of the women who have undergone training by Saathis report a notable improvement in their comprehension of the internet. Internet Saathi has emerged as a result of a distinctive collaboration between the public and private domains. This training program aims to enhance the income and overall quality of life for these women. The Internet Saathi initiative is currently implementing its second phase, which involves a transition from focusing solely on digital literacy to promoting digitally enabled livelihoods. This phase aims to empower women by equipping them with the necessary skills and resources to become entrepreneurs and service providers within their own communities (Mohan, 2018; The Bridgespan Group, 2020).

Thirdly, to overcome women's social and cultural obstacles, such as a lack of agency, paternalistic attitudes, and restricted access to online spaces, the digital literacy program must take these obstacles into account. Intensively raising awareness in this matter to all relevant stakeholders becomes a pivotal strategy including women and girls, families, policy makers, and society as a whole (Subrahmanian et al., 2022) with regard to the importance of and the potential of acquiring digital literacy during this era. The efforts must also be accompanied by effective laws and policies aimed at creating a safer online environment for women, which will encourage families to embrace and encourage women to access and utilize digital resources safely and to derive the greatest possible benefit from them (DAKA Advisory & WinDt Consulting, 2022).

The Internet Saathi program launched by the Tata Trust for rural women in India also provides an excellent model for addressing this challenge where digitally trained women train other women, contributing to a growing network of digitally skilled women in rural areas. Moreover, the presence of female trainers is an effective strategy for promoting positive views of women's ICT use (Mohan, 2018).

Another inspiring program which also aimed at dispelling social and cultural barrier is the program so-called Tech4Families program in Nigeria. The restriction of women and girls' access to technology and the Internet in northern Nigeria is often justified by citing concerns about moral deterioration. The Tech4Families initiative, implemented by Equal Access International (EAI), a beneficiary of the WCC (Women Connect Challenge), employs a combination of media and community mobilization strategies to bring together families and Muslim clerics. The program aims to address detrimental social norms and advocate for the acceptance of women's Internet usage by providing both social and theological grounds.

Tech4Families has developed a radio program that incorporates two distinct segments. The first section consists of a dramatized portrayal that tactfully examines a certain subject matter within a culturally suitable context. The second portion is a conversation format, wherein esteemed local experts and leaders are invited to provide their perspectives and insights. The weekly themes encompass several aspects related to the Internet, such as prevalent misconceptions and attitudes, moral and religious justifications for women's utilization of the Internet, and the crucial matter of ensuring safety and security while engaging with online platforms. Moreover, Tech4Families has organized families to partake in Listening Discussions and Action Groups, who gather to delve further into the radio program's content, engage in critical reflection on the discussed concerns, and enhance their skills and knowledge of technology within a secure setting (USAID, 2020). Here is a valuable impression which comes from a father who participate in the program.

“I have recorded tremendous change from this program, and my family members who are part of this program have also benefited greatly from it. Before I attended this, I used to think that social media should not be allowed for women and children. I used to prevent my children from using social media, but now I have learned a lot and allowed my wife and children to use the Internet. I even give them my own handset to use to access the Internet. I would like to call on male parents on the need to allow their children to learn and use the Internet. They need to understand that it is a tool for knowledge acquisition. We need to allow children to advance their learning. We need to let our wives learn so that they can guide the children, as most men don't spend a lot of time at home.”(USAID, 2020)

Access to technology and the internet by women is frequently viewed as immoral, inappropriate, or superfluous in many rural and impoverished communities (Edwards, 2017). Thus, as Sterling asserts in her words “The issue is not the phone, it is the power around what the phone allows you to do”. Hence, it is essential to work on perceptions with those who are frequently in positions of authority, such as males, community and religious leaders, and older adults. Confronting these extant social and cultural norms will assist women in gaining access to information and opportunities, developing self-confidence, and feeling empowered.

Lessons for Indonesia

It is widely believed that for women and men alike, the ability to leverage the digital transformation's potential is a linchpin of more sustainable and inclusive economies and societies. However, like in many other countries around the world, Indonesian women still have to struggle to be able to achieve equal conditions with men in this matter. In addition to the problem of access to digital technology, particularly for women in rural and semi-urban areas, Indonesian women also face the problem of inadequate digital literacy.

By referring to a number of studies, Rahayu (2021a) points out five types of digital literacy competencies which are still considered as problems and ultimately contribute to

inadequate digital literacy for Indonesian women. The first is technical proficiency, which is the ability to make the most of ICT in all contexts. Second, gender bias and the exclusion of women in accessing technology contribute to a lack of critical competence with respect to access, which in turn contributes to a misunderstanding of the value of technology. Third, the lack of critical competence in information processing contributes to the vulnerability of women, making them susceptible to fraud, online assault, and entanglement in a web of hoaxes and hate speech. Fourth, competence in mastering the content or substance of certain issues, such as feminism, finance or marketing. This weakness leads to a suboptimal utilization of digital technology, hence limiting the potential benefits they can derive from it. Lastly, creative competence refers to the ability to produce a variety of creative content through digital technology. This competency concerns "mastering ideas-not keystrokes" as stated by Gilster (as cited in Rahayu, 2021a). In a nutshell, inadequacy of digital literacy basically encompasses accessibility, digital literacy, and capacity development of women.

The current development of digital literacy efforts in Indonesia shows that the Indonesian Government through the Ministry of Communication and Information indeed has launched a number of strategic programs in order to realize national digitalization. In particular, the accessibility aspect is actually a priority. In an effort to complete the ICT infrastructure, the Ministry of Communication and Information is prioritizing the provision of fast and quality internet in villages that do not yet have one served including public service locations. Besides it accelerates the digitalization of broadcasting (analog switch off), frequency farming and refarming to provide fast internet services and quality, as well as preparing a national 5G technology implementation plan (Kominfo, 2020).

The latest data regarding Indonesian ICT access and infrastructure can be seen, among others, from the achievements of the Indonesian ICT Development Index published by BPS Indonesia (2022). Based on this data, it is known that the access and infrastructure subindex has improved from the previous year by 1.59 percent. Even though there is positive growth, neither data from BPS nor the Digital Literacy Index Report from the Ministry of Communication and Information(2022) provides disaggregated data regarding the conditions of improved access experienced by women's groups. However, a number of studies have indicated that with regard to accessibility, gender disparity still persists among Indonesian internet users, as a significant proportion of Indonesian women continue to lack proficiency in using digital media or the internet effectively (Marini et al., 2020; Suwana & Lily, 2017; World Wide Web Foundation, 2018). In addition, with regard to Indonesia's Program entitled "Makin Cakap Digital" (Increasingly Digital Proficient) which is aimed at accelerating digital transformation, build knowledge and public awareness, and develop digital skills, has been criticised because of failing to define women as specific targets and to reduce the gender gap. Moreover, the program also has no disaggregated data collected to track progress (Subrahmanian et al., 2022).

In reducing this access gap, apart from expanding the scope of access to digital technology, the Indonesian Government also needs to take steps to make sure that women also enjoy this increased access. To increase women's affordability, a tax incentive model for purchasing gadgets or other digital devices, as adopted by Pakistan and Australia, has the potential to reduce this access gap. Another proposed initiative is the provision of subsidized internet connection packages to low-income families, enabling them to access internet services for the benefit of the entire household, similar to the approach adopted by the Canadian Government. (Akram, 2023; OECD, 2018).

Gender inequality, a pervasive issue that also has permeated the digital technology industry, has emerged as a significant concern among various stakeholders in Indonesia. Numerous endeavours and initiatives have been undertaken by various entities, including governmental bodies and other stakeholders or organizations towards bridging the divide. Kurnia and Astuti in their article mapped these initiatives in 2017. The analysis revealed that the predominant strategies employed in this endeavour were raising awareness through several means, including outreach programs, talk shows, seminars, discussions, campaigns, and advocacy efforts (Anggraini, 2020; Doddy, 2020; Erika, 2019; Simbolon & Simbolon, 2021; Yuniar et al., 2019). Another category is the provision of training and mentorship (Erika, 2019; Hasyim & Anisa Makruf, 2022; Nafisah et al., 2022). Furthermore, university or academia are the most active sector in initiating digital literacy programs. Then, followed by government and communities as well as civil society organizations (Kurnia & Astuti, 2017).

It is widely recognized that awareness-raising strategies, such as socialization, sometimes exhibit a unidirectional nature and exhibit a lack of information pertaining to unresolved issues or challenges encountered by the women's groups being targeted by such initiatives (Kurnia & Astuti, 2017). The initiation of awareness-raising strategies in other countries is not extensively prevalent (International Telecommunication Union, 2016). The prevailing factor pertains to the mode of training and capacity building.

An exemplary illustration of this practice can be observed on the Internet Saathi program, which serves as a source of inspiration not only in terms of effective program structures aimed at mitigating the gender gap, but also in its collaborative efforts with private sector and nonprofits institutions as strategic partners. Engaging rural women as champions in the community to increase the initiative's scale and deepen the impact of the empowerment process. This collaboration enables the program to extend its reach to a larger population of women, thereby making a significant contribution towards reducing the gender divide in India (Mohan, 2018; The Bridgespan Group, 2020).

The existence patriarchal culture in Indonesia is one of the strong factors that contributes to gender inequality in the use of digital technology. In this matter, Indonesian women is not a single entity. Gender identity, particularly women's, is multifaceted (Hernandez and Roberts, 2019, as cited in Kurnia, 2021). Age, profession, marital status, social class, place of domicile, and the capacity to master technology indicate that a woman has multiple

identities. Consequently, it is necessary to consider this multifaceted identity when discussing access to and use of digital technology. In this instance, the influence of patriarchal culture is still felt by a great number of Indonesian women, particularly those living in rural areas or in lower-middle economic classes. Within the culture's influence, women are always placed in domestic spaces. Women are trapped in the domestic-public division of labour, which prevents them from accessing things outside of domestic affairs (Damayanti, 2019). In order to ensure inclusivity and safety in the digital sphere, it is crucial to dispel gender stereotypes that prevent women from accessing and obtaining the maximum benefits from digital technology.

Needless to say, it is neither simple nor fast job. The Tech4Families initiative in Nigeria inspires the participation of families and religious leaders in overcoming social norms that prevent women from accessing and using the internet (USAID, 2020). This model suggests that eliminating cultural barriers cannot be limited to women alone. The participation of other family members, particularly spouses and fathers, has the potential to alter the attitudes of gatekeepers who have prevented women from gaining internet access and reaping its benefits. This inclusive approach might serve as a supplementary point of reference for empowerment projects that have been previously executed by various Civil Society Organizations in Indonesia.

CONCLUSION

Digital literacy comprises a wide range of competencies that enable individuals to effectively employ digital resources for the purpose of locating, generating, disseminating, and assessing information. Hence, the acquisition of digital literacy is of paramount importance, as it empowers individuals to effectively navigate digital platforms in order to access, generate, and disseminate media content tailored to their unique requirements or preferences. In addition, the importance of digital literacy in relation to employability has been recognized, with a growing understanding of its correlation to increased earning potential and the creation of novel economic prospects.

However, gender inequality in digital technology has disadvantaged females. Problems with accessibility, digital literacy, and capacity that are not yet optimal result in Indonesian women frequently becoming victims of the negative effects of the ongoing digital transformation, rather than beneficiaries. In order to address this issue, multiple initiatives have been implemented to enhance the digital literacy of women through a range of activities aimed at empowering them. Nevertheless, the current execution of the system remains suboptimal. In the present situation, it is crucial to consider the implementation of effective strategies in different nations facing comparable challenges as a valuable point of reference for the reconstruction of diverse initiatives aimed at enhancing women's empowerment through digital literacy.

A number of good practices from various countries, such as tax incentives for purchasing gadgets or subsidized internet connection packages for low-income families, have

the potential to reduce internet access disparity. In addition, intensive training activities by and for women in rural areas have also proven to be a strategic way to improve internet comprehension as well as dismantle social barriers that hinder the advancement of women and girls in rural areas. No less inspiring is the efforts in dismantling gender stereotypes and cultural norms that hold back women and girls from accessing technology and internet by collaborating with individuals who frequently hold positions of authority, including men, religious and community leaders, and older adults. The efforts very useful for enhancing perceptions. These good practices can be an innovative reference in efforts to overcome the digital literacy gap that is still experienced by many Indonesian women and girls.

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ACKNOWLEDGMENT

I would like to express my gratitude to the Department of Political Science of Padjadjaran University which has provided support to the author to complete this manuscript. The author would also like to thank Faculty of Communication and Media Studies, UiTM Cawangan Melaka, Kampus Alor Gajah for their cooperation and facilities so that this article can be completed and published.

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