

Empowering Women Through Technology: Social Transformation in Education and Economic Empowerment

Faria Ruhana¹, Irwandi², Cecep Wahyu Hoerudin³, Tuti Dharmawati⁴, Mahadharu Ashifaati Ashfan⁵

¹Institut Pemerintahan Dalam Nenegri (IPDN), Sumedang, Indonesia

^{2,3}Universitas Islam Negeri Sunan Gunung Djati Bandung, Indonesia

⁴Universitas Halu Oleo, Kendari, Indonesia

⁵Universitas Brawijaya, Malang, Indonesia

Email: fariaruhana@ipdn.ac.id

Abstract

The development of information and digital technology has opened up new opportunities to increase the role of women in various aspects of life. However, inequality in access and use of technology is still a serious obstacle that needs to be overcome. Empowering women through technology is the key to creating a more inclusive and sustainable society. This research aims to investigate the role of technology in women's empowerment with a focus on social transformation, participation in the online world, and strategies for overcoming inequality. The descriptive qualitative research method is used by collecting data from the results of previous research and studies and then analyzing it systematically. The results of this research show that women, with increased digital literacy, can take a more active role in utilizing technology to improve their well-being. Inclusive policies and support for women's involvement in technology professions are key to overcoming inequality. In conclusion, technology integration is key to women's empowerment, and a holistic strategy is needed to achieve a more inclusive and sustainable society.

Keywords: *Women's Empowerment, Social Transformation, Education, Economy.*

A. INTRODUCTION

Women, as half of the world's population, have a very important role in supporting the social and economic development of a nation. However, in reality, women still often face various obstacles in accessing education and employment opportunities, so their enormous potential has not been fully explored. In the current era of digital and information technology, technology is the main key to forming social structures and providing opportunities for individuals to develop themselves (Siddiqui et al., 2020). The ongoing digital transformation in various sectors of life has opened up new opportunities for women's empowerment. Education and the economy are two critical areas where the use of technology can have a significant impact. In the context of education, technology can be a tool that facilitates wider and more equitable access for women to obtain the necessary knowledge and skills. Thus, education can be a strong foundation for increasing the role of women in various sectors (Kurniawan et al., 2022).

Apart from that, the economic sector also presents new opportunities through the use of technology. Globalization and digital connectivity open up women's access to global markets, enabling them to participate in the digital economy, start online

businesses, and increase involvement in broader economic activities. Therefore, an in-depth study of how technology can empower women in education and the economy is important to guide policies and practices that support inclusion and gender equality (Kamberidou, 2020).

Increasing women's access to technology also opens the door for their involvement in the development of creative and innovative industries. As significant contributors to the economy, women can play a vital role in creating innovative solutions and technology-based products. Empowering women in this sector not only supports overall economic growth but also changes gender stereotypes that still involve traditional perceptions of women's roles in the realm of technology. Therefore, this research aims to investigate the extent to which women's empowerment through technology can stimulate creativity and innovation, forming a new face of women's participation in the world of technology (Meng et al., 2021).

Meanwhile, the impact of technology on social transformation is also reflected in changes in communication and social interaction patterns. The development of social media and online platforms has changed the way women engage in societal dialogue. The use of technology as a means to voice aspirations, disseminate information, and build social networks has opened up opportunities for women to contribute to the formation of public opinion (Yeo et al., 2022). However, despite this progress, many challenges remain regarding online security and inequalities in technology access. This research will critically discuss the extent to which women can utilize technology as a tool to increase their social involvement, as well as identify barriers that may arise (Cinnamon, 2020).

In addition, gender inequality in access to and use of technology is still a serious issue that affects women's empowerment. Despite progress in increasing women's access to technology, gaps remain in levels of digital literacy, device ownership, and internet access. This phenomenon can hamper the full potential of women's empowerment through technology. Therefore, this research will highlight these aspects of inequality and investigate policy strategies that can be implemented to overcome these barriers and ensure that women's empowerment through technology is truly inclusive and sustainable (Mackey & Petrucka, 2021).

By delving deeper into the social transformations that arise from women's empowerment through technology, it can be hoped that this research will provide valuable insights for the development of more effective and sustainable policies, educational practices, and economic empowerment programs. This is what underlies the urgency and relevance of this research in supporting positive change in society through women's empowerment.

B. LITERATURE REVIEW

1. Women Empowerment

Etymologically, empowerment comes from the basic word power which means strength or ability. So, empowerment is interpreted as a process of gaining power, strength, or ability from parties who have power to parties who are less or not yet

empowered. Empowerment is a process for society to become empowered, encouraging or motivating individuals to have the ability or empowerment to determine their life choices. Empowerment must also be aimed at groups or layers of society that are left behind (Anwar & Syarifuddin, 2021).

So, it can be concluded that empowerment is a process that aims to strengthen the power or empowerment of weak groups or individuals in society, including individuals who experience poverty problems. As a goal of the conditions or results to be achieved by social change. People who are empowered and have knowledge can meet life's needs, both physical, economic, and social, such as having self-confidence and having a livelihood in carrying out their life's tasks (DellaValle & Czako, 2022).

Tutik Sulistyowati stated that women's empowerment is an effort to enable women to gain access and control over resources, economic, political, social, and cultural so that women can organize themselves and increase their self-confidence to be able to play an active role and participate in solving problems; to build abilities and self-concept (Abou-Shouk et al., 2021). Then Siti Nur Kodariyah stated that the indicators of success in women's empowerment are marked by the presence of 3 indicators as follows:

- a. Output indicators are characterized by the implementation of women's empowerment.
- b. The income indicator is characterized by women who have been empowered and can try to support the economy according to their skills.
- c. Impact indicators are characterized by empowered women who can live a decent life, develop businesses, organize or join society, and form other women to develop their skills (Gonzalez Parrao et al., 2021).

There are two characteristics of women's empowerment. First, as a reflection of emancipatory interests that encourage society to participate collectively in development. Second, is a process of involving individuals or society in the process of enlightenment, awareness, and collective organization so that they can participate (Tanima et al., 2020).

Empowering women is one strategic way to increase women's potential and increase the role of women in both the public and domestic domains. This can be done by:

- a. Dismantling the myth of women as complements in the household. In ancient times, there was a strong opinion in society that women were "*konco wingking*" (friends behind their backs) for their husbands and the notion of "*swarga nunut Hell katut*" (to heaven along, to hell carried away). The words *nunut* and *katut* in Javanese have the connotation of being passive and not having initiative, so one's fate depends on the husband (Angelone et al., 2021).
- b. Providing various skills for women, so that women can also be productive and not depend on men for their fate. Various skills can be taught, including sewing, embroidery, and entrepreneurship skills by making batik cloth and various types of food (Singh & Pattanaik, 2020).

- c. Providing the widest possible opportunities for women to be able to participate in or pursue as wide an education as possible.

2. Social Transformation

Several scholars have provided an understanding of social transformation, each of which highlights different aspects of change in society. First, Kingsley Davis describes social change as a transformation that occurs in the structure and function of society. According to him, this change includes a shift in social organization and the roles played by individuals within it. Davis emphasizes the structural and functional dimensions of these changes (George et al., 2021). Meanwhile, William F. Ogburn sees social change as a phenomenon that involves cultural elements, both material and immaterial. Ogburn emphasizes the great influence of material cultural elements on immaterial elements, highlighting the importance of changes in artifacts and technology on society's mindset and values (Ratten, 2021).

Mac Iver provides another perspective, where social change is explained as a transformation that occurs in social relations or changes to the balance of social relations. It highlights the dynamics of interactions between individuals and groups in society, as well as how these shifts can affect the social structure as a whole (Portes, 2021). Gillin and Gillin see social change as a variation of the way of life accepted in society. They show that these changes can be triggered by various factors such as geographic conditions, material culture, population composition, ideology, and the process of diffusion or discoveries in society (Sudarman, 2023).

Combining these perspectives, it can be concluded that social change includes shifts in the societal institutions of a society. These changes affect social systems, including values, social attitudes, and behavioral patterns among groups in society. This process of change also involves the adoption of reform ideas by members of the social system, which then results in changes in the overall structure and function of the social system (Manfredo et al., 2021).

The process of social change is a series of stages that include invention, diffusion, and consequences. First, the invention stage refers to the process in which new ideas are created and developed. Innovation and new thinking emerge as the first step in triggering change in society. In this stage, people's creativity and imagination play an important role in creating new solutions or ideas that can bring positive change (Ortt & Kamp, 2022). Then, the diffusion stage involves the process in which the new ideas are communicated into the social system. Information and innovation are disseminated through various communication channels, such as media, social interactions, or educational institutions. Diffusion becomes an important bridge that connects new ideas with society at large, enabling the spread of innovative thinking and acceptance by wider groups (Agélii Genlott et al., 2023). The final stage, namely consequences, refers to the changes that occur in the social system as a result of the adoption or rejection of the innovation. Social change occurs when new ideas are implemented and have an impact on people's daily lives. The consequences of

adopting or rejecting these new ideas create transformations in social structures, values, and patterns of behavior (Bayuo et al., 2020).

It is important to note that the emergence of social transformation is not without cause. This process is influenced by various factors, such as cultural accumulation, contact with other cultures, population heterogeneity, social chaos, and even social change itself. Social transformation involves the active role of the population in accepting or rejecting innovation, technological progress, changes in cultural values, and social movements that encourage change (Osiurak & Reynaud, 2020). In this context, society needs to be involved in the process of social transformation to achieve better progress and development. In the Indonesian national encyclopedia, the term social transformation is often interpreted the same as social change, indicating that both have similar meanings in the context of discussions regarding societal dynamics (Fritz et al., 2021).

C. METHOD

To dig deeper into women's empowerment through technology, this research will be carried out using a descriptive qualitative approach. This approach was chosen to provide an in-depth understanding of the role of technology in the context of women's empowerment in education and the economy. The data that will be used in this research comes from various research results and previous studies which still have relevance to the content and discussion of this research. Information gathered from scientific literature, journals, and previous research will be the basis for detailing the role of technology in increasing access to education, empowering women in the digital economy, as well as the impact of social transformation that may occur. Furthermore, when the research data has been successfully collected, the next stage involves data processing. This data processing aims to compile findings which will then be interpreted in the analysis chapter. With this approach, it is hoped that this research can provide a holistic picture of how technology can be an effective tool in empowering women, as well as detailing strategies and policies that can support inclusion and gender equality in the era of information and digital technology (Kusumastuti & Khoiron, 2019).

D. RESULT AND DISCUSSION

1. The Role of Technology in Increasing Access to Education for Women

The role of technology in increasing access to education for women is crucial in establishing a more inclusive and equitable foundation. Technology accessibility has become an important facilitator in supporting women's education at various levels of society. As the penetration of smart devices and internet access increases, technology is becoming a bridge to overcome geographic and economic barriers that often become obstacles to obtaining education. In this context, equal access to education through the use of technology is a significant step to ensure that women from various backgrounds have equal opportunities to develop their potential.

The use of e-learning platforms and educational applications is one of the main aspects of expanding the reach of education for women. These platforms not only provide easy access to learning materials but also allow flexibility in time and place, according to the needs of women who often have multiple responsibilities in everyday life. By using e-learning platforms, women can overcome time and geographical limitations, and utilize education as a means to increase knowledge and skills that can support career development and independence.

In efforts to increase access to education, the role of technology is also very crucial in providing a positive impact on non-formal education. With technology, women can access additional learning resources, online courses, and other non-formal educational resources. This opens up opportunities for women to engage in independent learning according to their interests and needs. This approach not only removes the cost barrier but also gives women the freedom to explore various areas of knowledge that may not be accessible through formal education.

Through efforts to increase the accessibility of technology as an educational facilitator, utilizing e-learning platforms, and supporting non-formal education, women can more easily access and take part in the educational process. Empowering women through technology not only has an impact on increasing literacy levels but also opens the door for them to be actively involved in various sectors of life that previously may have been difficult to access. This initiative not only has a positive impact on women themselves but also contributes to the development of a more sustainable and inclusive society as a whole.

2. Women's Empowerment Through the Digital Economy

Empowering women through the digital economy has become a new paradigm in improving women's welfare and making a significant contribution to the economy as a whole. The role of online business opens up new opportunities for women to get involved in the business world and develop their businesses independently. E-commerce platforms and marketplaces provide tools that can be accessed by women regardless of geographical boundaries. In this way, women can sell their products or services widely, overcoming traditional obstacles associated with distribution and marketing. Online business provides easy access to global markets, opening up greater economic potential for women who want to start and develop their businesses.

Women's involvement in startups and innovation is a key point in shaping the digital economic landscape. Women involved in the startup industry not only contribute to the development of the business ecosystem but also create innovative solutions to various challenges faced by society. Accelerator programs and special funding for women in technology also open the door to initiatives started by women. The involvement of women in the technology innovation sector creates a diverse and inclusive environment, resulting in more holistic and competitive solutions.

Digital economic opportunities not only have a positive impact on individual women but also have the potential to improve women's welfare as a whole. By providing access to digital economic opportunities, women can increase their income,

reduce economic inequality, and support sustainable community development. Empowering women in the digital economy is not only about providing access but also building the capacity and skills necessary for women to take an active role in managing their online businesses and participate in the rapidly developing digital economic ecosystem.

Empowering women through the digital economy creates a solid foundation for improving women's welfare, creating an inclusive business environment, and supporting sustainable economic growth. This initiative is not just about providing opportunities, but also about building the capacity and support needed so that women can reach their full potential in facing the challenges and opportunities of this digital era.

3. Social Transformation Through Creativity and Technological Innovation

Social transformation through creativity and technological innovation creates a dynamic landscape, in which women have an increasingly significant role. The influence of technology on women's creativity is an important part of encouraging unique expressions and contributions in various fields. Technology allows women to explore and develop their creativity through a variety of media, from digital art to multimedia content production. By leveraging technology, women can overcome traditional limitations and gain a platform to convey their creative ideas, changing the way society views the role of women in the creation of culture and art.

Technological innovation not only has an impact on a personal level but is also a major factor in social transformation. The adoption of new technologies opens the door to accelerating social change, including increased gender equality. The application of technology in various sectors such as education, health, and the economy provides opportunities for women to be more actively involved and contribute to positive change in society. Technology also plays a role in shaping the way society interacts and communicates, opening up space for women to engage in dialogue and shape public opinion more equally.

Women's contribution to the development of the latest technology is not only limited to the use of technology but also involves their participation in the development and innovation process. Women as software developers, engineers, and technologists not only bring diverse perspectives but also shape technology to be more responsive to the needs of all of society. Innovations that emerge from this diversity can be more targeted and relevant to women's needs, creating products and services that can improve their quality of life.

Social transformation through creativity and technological innovation creates new dynamics in the role of women in society. The use of technology as a medium for creative expression, social change driven by innovation, and the active contribution of women in technological development provide the foundation for a more inclusive and sustainable society. This initiative not only opens up opportunities for women to develop but also shapes a culture and social structure that is more responsive to the needs of all individuals, regardless of gender.

4. Women's Participation in Online Spaces and Social-Media

Women's participation in online spaces and social media has become an integral component in shaping social and political dynamics in this digital era. Social media opens the door for women to take part in politics, cast their votes, and influence the policy agenda. The role of social media in increasing women's political participation is an important bridge for voicing gender issues, creating equality, and embracing the role of women in political decision-making. With a broad platform and equal access, women can mobilize support, put forward issues that are relevant to their lives, and make a real contribution to directing the flow of public opinion.

In addition, the positive impact of online communication, especially through social media, on women's mental health is an important highlight. Women often find social support, mental health advocacy, and space to share experiences through these platforms. The ability to communicate and connect with people from diverse backgrounds can provide women with an important feeling of support, reduce isolation, and improve mental well-being. Social media creates a space where women's narratives can be expanded, removing the stigma around mental health, and providing a platform to advocate for a better understanding of the needs and challenges women face.

However, women's involvement in the online world is also challenging and full of challenges. The shift of communication spaces to the online realm brings risks, including the spread of incorrect information, online harassment, and privacy threats. These challenges can limit women's participation, especially when they feel unsafe or intimidated in online spaces. Meanwhile, opportunities for women's involvement in the online world involve the ability to expand social networks, gain access to broader information, and build platforms to promote the issues they are fighting for.

Women's participation in online spaces and social media is a complex and multidimensional phenomenon. Getting involved in it can have a huge positive impact, such as increasing political participation, supporting mental health, and providing a platform for social engagement. However, the challenges that women face in the online world must also be considered and addressed to ensure that these platforms remain inclusive and safe spaces for every individual, regardless of gender.

5. Addressing Inequalities in Access and Use of Technology

Addressing inequalities in technology access and use is a profound challenge that requires a holistic approach and planned action. One of the key steps is a strategy to increase digital literacy for women. Digital literacy is an essential foundation so that women can optimize the benefits of technology. Training and education programs should be specifically designed to equip women with digital skills, from hardware and software use to digital security. By increasing digital literacy, women can be more confident and skilled in accessing and using technology, giving them a strong foundation to actively participate in the rapidly evolving digital world.

In addition, implementing inclusive policies is key to overcoming difficulties in technology access. This policy should cover aspects such as improving

technological infrastructure, device subsidies, and affordable internet access. Inclusive policies should also consider women's specific needs, such as online mobility and safety, to ensure that technology access does not create additional barriers to women's participation. These steps are important to create an equitable and just environment, ensuring that women from all walks of life have equal opportunities to engage in the digital era.

Support for women's involvement in technology professions is an important aspect of overcoming this inequality. Initiatives such as training programs, scholarships, and mentorships can motivate women to pursue careers in technology. Additionally, creating an inclusive and supportive work environment contributes to increasing women's participation in the sector. Increasing the representation of women in the world of technology can also motivate other women to pursue similar careers and overcome stereotypes that still hinder women's participation in technology professions.

Overall, efforts to overcome inequalities in access and use of technology require joint efforts from the government, the private sector, and society. Increasing digital literacy, implementing inclusive policies, and supporting the involvement of women in technology professions are strategic steps to create a positive transformation towards inclusivity and equality in the world of technology. By integrating this approach, society can overcome the inequalities that remain obstacles to women's empowerment through technology.

E. CONCLUSION

In the era of information and digital technology, the role of women is increasingly important in facing challenges and taking advantage of emerging opportunities. In the context of empowering women through technology, discussions regarding access to education, the digital economy, social transformation, participation in the online world, and efforts to overcome inequality show the complexity and diversity of issues that need attention. Increasing digital literacy, inclusive policies, and support for women in technology professions are strategic steps that can support positive change in society. Empowering women through technology is not only about providing access but also creating an environment that supports and facilitates women's active participation in various aspects of life. This transformation requires collaboration between government, the private sector, and society to implement inclusive policies and ensure that the benefits of technological developments can be felt by all individuals regardless of gender. By presenting sustainable and inclusive solutions, we can shape a future where women have a central role in shaping a more just, sustainable, and competitive society in the digital era.

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