Empowering Older Adults in Digital Security: A Community-Based Analysis of the *Tular Nalar* Program in Aceh, Indonesia

*Cut Lusi Chairun Nisak[1], Uswatun Nisa[2], Dara Fatia[3], Fitriana Dina Rizkina[4]
[1,2,3]Universitas Syiah Kuala, Banda Aceh, Indonesia
[4]Ehime University, Ehime, Japan
*Corresponding Author: cutlusi@usk.ac.id

Abstract

The escalating incidence of cybercrime in Indonesia has rendered older adults (lansia) one of the most vulnerable populations, primarily due to limited digital literacy and a lack of awareness regarding threats such as *hoaks*, identity theft, and online fraud. This study analyzes strategies for empowering older adults in digital security, focusing on the implementation of the *Tular Nalar* program by Mafindo in Aceh Besar District. Employing a qualitative descriptive approach, data were collected through in-depth interviews, participant observation, and documentation, and analyzed using Laverack's community empowerment framework. The findings indicate that the program fostered active participation, expanded access to information, and strengthened social ties among participants. Facilitators played a crucial role in contextualizing digital security risks based on the lived experiences and local values of the *lansia*. However, the empowerment process has not yet resulted in collective autonomy, as participants remain reliant on facilitators and have not formed self-sustaining community structures. Disparities in digital literacy, expectations of incentives, and structural barriers further constrain the realization of community-driven empowerment. These results highlight that digital empowerment for older adults is not merely about increasing literacy, but is a complex social process rooted in local structures, cultural values, and community power dynamics. The application of Laverack's model in this context underscores the need to integrate cultural values and locally grounded approaches into the design of sustainable empowerment strategies for older adults, while also addressing the persistent challenge of achieving community autonomy.

Keywords: *Older Adults, Digital Literacy, Cybersecurity, Community Empowerment, Tular Nalar*

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A. Introduction

The rapid advancement of information technology has profoundly transformed various aspects of Indonesian society. According to Datareportal (2023), internet usage in Indonesia grew by 0.6%, reaching an additional 1.8 million users. However, alongside this progress, new challenges have emerged in the form of escalating cybercrime, which disproportionately targets vulnerable

groups—particularly older adults (Indonesiabaik, 2023). Low levels of digital literacy and limited awareness of threats such as hoaxes, identity theft, and online fraud make older adults easy targets for cybercriminals.

Previous research highlights that older adults face significant obstacles in mastering digital technologies, ranging from cognitive limitations and emotional barriers to restricted access and a lack of inclusive training opportunities (Chen & Chan, 2014; Yoo, 2020; Xu et al., 2024). Despite their vulnerability, older adults often do not receive adequate supervision from families or their social environment, as they are perceived to possess greater independence and maturity compared to children (Nisak, 2023). Existing digital training programs frequently fail to address the specific needs of older adults as active learners, as they often overlook participants' characteristics, values, and social contexts (Nisa, Nisak, & Fatia, 2023).

Furthermore, studies such as Nuriana et al. (2019) reveal that the adoption of digital technology cannot be achieved solely through knowledge transfer; it requires participatory approaches that actively involve older adults in the learning process. Other scholars argue that digital literacy for older adults is not limited to technical competence but is also closely related to developing digital resilience—the capacity to critically evaluate and respond wisely to digital risks (Helsper & Van Deursen, 2015). Training models rooted in local values and interpersonal communication patterns can strengthen solidarity among older adults and help reduce barriers to technological understanding (Chao, Kao, & Yeh, 2019; Wardiani & Anisyahrini, 2022). Participatory empowerment models, as articulated by Zimmerman (1995), emphasize that individuals gain greater control over their lives when they are involved in decision-making and critical reflection within their social environments.

While the existing literature has explored the barriers to digital literacy among older adults, most studies have not addressed how empowerment processes can be internalized and contextualized within local social structures and cultural values. Notably, few have examined the empowerment of older adults using Glenn Laverack's (2006) community empowerment framework, which asserts that successful empowerment is measured not only by literacy or participation rates but also by the development of social control and community independence.

This study seeks to fill that gap by analyzing the implementation of the *Tular Nalar* program conducted by *Masyarakat Anti Fitnah Indonesia* (Mafindo) in Aceh Besar District. Distinct from previous research, this study explores not only the challenges and needs faced by older adults regarding digital literacy but also examines the dynamics of social relationships, cultural values, and community structures that influence the empowerment process. By focusing on these dimensions, this research offers a theoretical contribution to the development of

a contextual and relevant digital empowerment model for older adults in Indonesia, while also providing practical recommendations for designing more inclusive and sustainable digital literacy programs and policies for older adults.

B. Method

This study adopts a descriptive qualitative approach to explore strategies for empowering older adults in digital security through the *Tular Nalar* program in Aceh Besar. The research site was selected using purposive sampling at the Mafindo Aceh office. Informants comprised six individuals: one regional coordinator, one program officer, two facilitators, and two *lansia* (older adult) participants. Informant selection was based on their direct involvement in program implementation and a minimum experience of participating in at least one training session.

Data collection methods included in-depth interviews, participant observation during training sessions, and documentation, such as activity reports, photographs, and field notes. The data analysis employed the interactive model of Miles and Huberman (1994), encompassing data reduction, data display, and conclusion drawing. During the data reduction phase, interview transcripts and observation notes were coded according to key themes corresponding to Laverack's (2006) community empowerment framework: active participation, capacity building, information access, social relations, supportive environment, and community independence.

Subsequently, the coded data were analyzed to identify patterns, similarities, and differences among informants, providing a comprehensive understanding of both processes and barriers encountered in program implementation. The data display stage involved the construction of thematic matrices and descriptive narratives to facilitate interpretation. Data validity was reinforced through source and methodological triangulation, as well as member checking with the involved informants.

C. Result and Discussion

1. Barriers to Active Participation of *Lansia* in the Program

Within the framework of community empowerment theory, Laverack (2006) emphasizes that genuine participation should not be assessed merely by physical presence in a program, but by the extent to which the community exercises control over processes and decision-making. In the case of *Tular Nalar*, the involvement of *lansia* was predominantly passive and receptive. They participated as appointed attendees rather than as individuals who consciously recognized a personal need for enhanced digital capacity.

This phenomenon can be interpreted as a form of pseudo-participation, where participants are included in activities but lack the authority to influence

program content or direction. The *lansia* were not involved in the prior mapping of digital needs, nor were they given opportunities to express their aspirations before the curriculum was determined. The activities unfolded within a framework entirely designed by *Mafindo*'s central office, with the role of *lansia* limited to that of technical implementers.

This situation reveals an asymmetry of information and power relations between organizers and participants. While *lansia* are often regarded as socially mature and experienced, in the digital context, they are positioned once again as passive learners. Ideally, an empowerment approach would harness the life experience of *lansia* as a valuable resource for reframing digital threats from a social and moral perspective.

Furthermore, this top-down participatory model complicates the realization of genuine community ownership, meaning a sense of collective responsibility for both the program and its outcomes. This is evidenced by the lack of sustained initiative following program completion. Few *lansia* continued with independent learning or took the initiative to establish digital learning groups within their communities. Dependence on facilitators and formal structures indicates that power has not yet shifted to the community, and true empowerment remains unrealized.

From a sociological perspective, this condition also demonstrates how local social structures continue to mediate participatory access, including among older adults. The involvement of *gampong* leaders as primary intermediaries for mobilizing participants highlights the predominance of institutional social capital over the individual or collective awareness of the *lansia* themselves. On the one hand, this can be beneficial in reaching hard-to-access groups; on the other, it creates a pattern of cultural dependence on local authorities (Heritage & Dooris, 2009). Thus, to achieve genuine empowerment, participation in programs such as *Tular Nalar* must be reconceptualized as a two-way process in which *lansia* are not merely recipients of information but also producers of meaning and strategic actors in the digital transformation of their communities. In practice, this requires systematically involving *lansia* from the planning stage through to program evaluation in subsequent cycles.

2. Capacity Building through Facilitators

One of the central dimensions in Laverack's (2006) community empowerment framework is capacity building. In the context of the *Tular Nalar* program, capacity building was initially directed not toward the *lansia* participants themselves, but primarily toward facilitators, who served as the key actors in the educational process. The data reveal that *Mafindo* Aceh deployed facilitators who had completed specialized training or a "training of trainers" program prior to the start of the initiative. This training covered mastery of digital security materials, educational approaches suitable for older adults, and

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effective communication strategies. Facilitators then became the main agents responsible for delivering digital security content to *lansia* participants in small group settings.

Importantly, the facilitators' role was not simply to transmit information in a one-way fashion. They were required to adapt their approach to the social and psychological backgrounds of the participants, including using local languages, religious values, and everyday examples. As one facilitator described:

> "Use simple language they understand, suited to their age. If you can use the local dialect, it's much easier. And give examples from their daily life." (Interview, June 2024)

This facilitation model embodies a dialogical approach consistent with the principles of critical pedagogy in community empowerment. Facilitators are not merely conveyors of information, but reflective companions who create spaces for dialogue between the lived experience of *lansia* and contemporary digital issues (Eger, Miller, & Scarles, 2018). Here, capacity building is not limited to technical knowledge; it also encompasses the ability to foster a safe and relevant social learning environment. However, the program's focus on facilitators also presents significant challenges. There was no attempt to develop capacity-building models among the *lansia* themselves, such as training local *kader* or establishing peer educators from within the older adult community. As a result, capacity remained centralized in the hands of external facilitators and was not horizontally distributed among participants.

According to Laverack's framework, this situation reflects what he terms "dependent empowerment," where capacity-building efforts are still heavily reliant on external agents. The community has yet to achieve true "empowerment outcomes"—that is, self-reliance in designing, implementing, and evaluating its own initiatives. From a sociological perspective, the dominance of facilitators in this process indicates that internal agency has yet to emerge within the *lansia* community. Collective capacity is not yet possessed by participants themselves but is still mediated by the presence of facilitators. Moving forward, the challenge for program implementers is to transform *lansia* not only into learners, but also into peer facilitators who can nurture independence and ensure the sustainability of digital education within their own communities.

3. Access to Information and Digital Literacy

In Laverack's (2006) model of community empowerment, access to information is considered a foundational dimension of the empowerment process. Without relevant, accessible, and comprehensible information, communities lack the basis for developing critical awareness or making decisions that affect their lives. Information serves as the initial bridge toward building capacity and community autonomy. Within the *Tular Nalar* program, access to information was facilitated by presenting fundamental materials on digital

security. These included the identification of personal data, the importance of creating strong passwords, recognizing malicious links, and strategies to avoid digital fraud and *hoaks*. Information was delivered through modules, presentation handouts, and small-group discussions led by facilitators.

However, delivering information to *lansia* is far from a straightforward transfer of data and definitions. As a social group, *lansia* often lack familiarity with digital terminology, have little prior exposure, and present diverse cognitive capacities. Terms such as "account," "verification," or "password" can seem foreign to many participants. This demonstrates that access to digital information is not solely about the availability of materials but is also shaped by the social and psychological readiness of *lansia* as information recipients. Sociologically, access to information is constructed through past experiences, personal values, and relationships with technology—meaning the same information can carry different meanings and impacts for each participant.

This reality highlights the importance of contextually delivered information, as practiced by program facilitators. Rather than simply relaying material in its standard form, facilitators sought to translate it into language and life experiences familiar to *lansia*. For example, when discussing digital threats, facilitators drew connections to situations in which participants received suspicious phone calls from individuals pretending to be police officers or relatives. This approach represents a participatory educational practice that bridges the gap between the digital world and the social reality of participants (Gushevinalti & Firmansyah, 2023). From Laverack's perspective, this marks an initial stage of "critical awareness"—the recognition of risks and the first steps toward responding to digital threats. While it does not yet result in full control or strategic decision-making, participants began to understand the importance of protecting personal data and became more alert to suspicious messages or information.

Nevertheless, while information was presented and most participants showed improvement in post-test results, not all *lansia* were able to internalize this knowledge into habitual or concrete actions. This suggests that access to information alone does not automatically lead to behavioral change, especially without ongoing support and reinforcement within their social environments. From an empowerment standpoint, the information access provided through *Tular Nalar* is a vital initial step but remains insufficient. Without consistent learning support and opportunities for regular digital practice, information risks becoming dormant knowledge without practical value. Consequently, strategies to build self-confidence, provide hands-on experience, and strengthen community support are essential to transforming information access into sustainable digital skills for *lansia*.

4. Strengthening Social Relations and Peer Support

Social networks and interpersonal relationships play a central role in community empowerment, especially for vulnerable groups such as *lansia*. Laverack (2006) emphasizes that these elements are not merely channels for information dissemination, but are also critical foundations for building trust, solidarity, and a sense of belonging within the community. Studies have shown that participation in social groups improves the well-being of older adults, reinforces social ties, and serves as a medium for redefining their roles (Veras, Lacerda, & Forte, 2022). In this study, the significance of social networks is particularly evident given the physical limitations and tendency toward social isolation experienced by many *lansia*. Amid rapid digitalization, these networks serve as bridges, enabling older adults to remain connected to supportive social environments.

The *Tular Nalar* program demonstrated an awareness of this dynamic through its implementation strategy, which organized *lansia* into small groups of approximately ten participants, each guided by a facilitator. This small-group arrangement facilitated more intensive interactions, not only between facilitators and participants but also among the *lansia* themselves. Participants were encouraged to discuss, share experiences, and relate the program content to their everyday lives. In several sessions, facilitators would prompt discussions by asking about participants' experiences with suspicious phone calls, using these anecdotes as entry points to address digital security. This approach proved effective in helping participants understand the material while also fostering an emotionally and socially supportive environment. Participants felt more comfortable asking questions, expressing uncertainty, and were motivated to learn because they did not feel isolated. Supplementary activities, such as group exercise (*senam lansia*) and educational games, further contributed to building camaraderie and a positive, enjoyable atmosphere.

> "Playing the ABC game, at first we had to push a bit, but eventually they joined in. That's one of the basic techniques." (Facilitator, interview, June 2024)

From an empowerment perspective, these practices illustrate how the program has succeeded in building social capital—what Laverack (2006) terms "community cohesion and networks." These networks serve as organic media for collective learning and peer support mechanisms. When *lansia* share their experiences, they exchange not only information but also trust, empathy, and mutual care. Sociologically, such interactions reinforce social cohesion and revitalize the community's role as a source of non-formal learning. Previously marginalized from the digital world, *lansia* participants in these small groups began to carve out new collective spaces where they felt included and became part of a shared learning movement.

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Nonetheless, it is important to note that this potential for social relations has not yet been fully harnessed as a strategy for program sustainability. The program remains centered on facilitators as the primary channel for information dissemination. There is little evidence of initiatives to develop local *kader* among *lansia* or to establish community-based digital learning groups after formal activities conclude. This indicates that, while social bonds have been established, they have not yet been leveraged as internal driving forces for community empowerment in the long term. Thus, the *Tular Nalar* program has effectively created a safe, friendly, and collaborative learning environment for *lansia*, but further efforts are required to transform these social networks into independent support structures, such as regular learning groups or discussion forums. In Laverack's terms, the program has touched upon "interpersonal support systems" but has yet to evolve toward autonomous, community-driven structures.

5. Supportive Environments: Navigating Physical and Psychosocial Barriers

A conducive social and physical environment is a key factor in Laverack's (2006) theory of community empowerment, particularly in the dimension of a supportive environment. In this context, the environment encompasses not only the physical space where activities are conducted but also the social atmosphere, psychological comfort, and inclusivity that enable full participation of all community members.

The *Tular Nalar* program made concerted efforts to create an *elder-friendly* learning environment. This was reflected in the scheduling of sessions at times when *lansia* felt refreshed—typically in the morning—and in keeping session durations manageable to prevent fatigue. Facilitators employed a communicative and non-authoritarian approach, fostering an interactive space where *lansia* participants felt at ease.

Nevertheless, the physical locations used for training—such as *gampong* halls or organizational offices—posed significant limitations. Many venues lacked sufficient space, proper ventilation, or amenities like supportive chairs and accessible layouts for *lansia* with mobility issues.

> "The room was small, but we chose it because it was close to participants' homes. If the place is far and nice, they're less willing to attend because of the difficulty reaching it." (Facilitator, interview, June 2024)

This statement illustrates the dilemma between accessibility and environmental quality. Selecting a location that is easily reachable for *lansia* often means sacrificing comfort and effectiveness in delivering materials. Despite the program's intention to foster an inclusive environment, local resource and infrastructure constraints remain major challenges. From a sociological perspective, a supportive environment also includes psychosocial aspects, such as a sense of safety, freedom from intimidation, and an atmosphere that respects

different levels of understanding. In this regard, facilitators played a crucial role in building an environment free from embarrassment or inferiority. *Lansia* were encouraged to ask questions, share their experiences, and acknowledge their limitations without fear of judgment. This social recognition is vital for older adults, who are often marginalized in technological contexts (Niyomdecha & Noklang, 2024).

However, the absence of support such as medical personnel, first-aid equipment, or emergency procedures highlights that the physical environment still falls short of fully meeting the protection needs of this vulnerable group. Laverack's framework underscores that empowerment cannot occur without an environment that allows the community to grow safely and sustainably. Hence, the *Tular Nalar* program has succeeded in building a socially supportive environment through empathetic facilitation and context-sensitive scheduling. However, physical and structural barriers persist, diminishing the overall effectiveness of empowerment. Future interventions should consider cross-sector collaboration—engaging health agencies, village authorities, and local communities—to create learning spaces that are not only inclusive but also truly safe and accessible for *lansia*.

6. Monitoring, Evaluation, and Ongoing Support

Within Laverack's (2006) community empowerment framework, reflection and evaluation are essential for fostering critical awareness and enhancing a community's capacity to manage programs independently. Monitoring and evaluation serve not only as technical performance measures but also as social learning mechanisms, enabling participants to recognize changes in themselves and their environment.

The *Tular Nalar* program implemented monitoring and evaluation through two main instruments: pre- and post-tests, and ongoing support via a WhatsApp group following the training. The pre-test was conducted prior to the session to gauge the initial understanding of *lansia* regarding digital security—such as creating secure passwords, understanding personal information, and recognizing *hoaks* or online scams. The post-test assessed the improvement in knowledge after program completion. While this approach effectively provided quantitative insights into participant progress, the diversity in literacy levels and form-filling ability among *lansia* means that written evaluations must be interpreted with caution. Some participants required assistance from facilitators to complete forms, which may influence the objectivity of the results.

Additionally, post-program support was extended for two to four weeks through a WhatsApp group. Facilitators remained accessible to answer questions, reiterate materials, and monitor whether participants faced challenges in applying what they had learned. This support mechanism was intended to prolong the impact of the intervention and help *lansia* form safer digital habits.

"We monitored them for two weeks after the activity, via the group. Some are active in asking questions, others are more passive. But at least they know support is available if needed." (Mafindo Aceh, interview, June 2024)

From Laverack's perspective, such follow-up represents an external support system that can help participants retain knowledge and gradually develop empowerment. However, the program remains highly dependent on facilitators. There is little evidence of peer-to-peer mentoring among *lansia* themselves, indicating that the empowerment process has not yet fully transitioned to the community. Sociologically, reliance on digital platforms like WhatsApp for ongoing support also exposes gaps in access. Not all participants own or independently operate smartphones, so digital post-program communication reaches only a portion of the group. This highlights the importance of multilayered approaches, combining digital communication with community-based, face-to-face interactions (Lin et al., 2019).

Although monitoring and evaluation were implemented, there is not yet a systematic mechanism to involve participants actively in assessing the program from their own perspectives. Evaluation processes remain largely technocratic and organizer-driven, rather than participatory or reflective in ways that encourage participants to recognize and analyze their own growth. In community empowerment, collective reflection is key to building awareness of both personal and social change. Thus, the *Tular Nalar* program has established a foundation of monitoring and ongoing support, but these efforts must be strengthened through participatory evaluation methods and by shifting the locus of support from facilitators to the *lansia* community itself. According to Laverack, internal systems must be developed so the community can evaluate and sustain its own capacity in the long term.

7. Inequalities and Structural Barriers

Structural factors represent persistent challenges in any community empowerment process. Laverack (2006) highlights that empowerment is shaped not only by participation and internal capacity, but also by social, economic, and cultural structures that can either restrict or facilitate community control. Issues such as unequal access, disparities in resources, and local power dynamics ultimately determine the direction and success of empowerment initiatives. In the context of the *Tular Nalar* program, several significant and recurring structural obstacles were observed, especially related to disparities in participant capabilities, incentive expectations, and unequal representation. One of the main challenges is the striking variation in digital literacy among participants. Some *lansia* already possess devices and basic experience with social media, while others have never used a mobile phone and even resist the adoption of technology in their daily lives. As one informant stated:

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"I don't use a mobile phone; I never wanted to. My children offered to give me one, but I said no." (Interview, June 2024)

This statement illustrates that inequality is not only about device access, but also values, beliefs, and long-standing habits. Sociologically, this reflects a form of social *habitus* that cannot be easily changed through a single training session. Such differences create internal fragmentation, making a one-size-fits-all approach ineffective. Additionally, the program encountered expectations of incentives among *lansia* participants. This is consistent with Yefni (2018), who found that many participants anticipate material incentives, which sometimes reduces empowerment activities to mere formalities. While *Mafindo* provided basic food packages (*sembako*) as a token of appreciation, some *lansia* joined the program expecting tangible benefits rather than knowledge. This pragmatic orientation can hinder reflective and transformative engagement—the very essence of empowerment—if not managed appropriately.

Further disparities arose in gender and age representation. The program was predominantly attended by female *lansia*, with few male participants. Moreover, difficulties in recruiting older adults within the desired age range led organizers to include *pra-lansia* (pre-elderly individuals) in the group. These factors affected group dynamics and resulted in imbalances in perspectives and responses. According to Laverack, such imbalances impede the development of collective power, as not all voices in the community are equally represented.

At the local level, inadequate facilities and logistical constraints also presented challenges. Many *gampong* lacked suitable learning spaces or sufficient transportation options for *lansia* with limited mobility. These issues further emphasize that local institutional structures are not yet fully supportive of empowerment programs for vulnerable groups. These structural barriers demonstrate that digital empowerment for *lansia* is inseparable from the broader socio-cultural and economic context. In Laverack's approach, this calls for interventions that go beyond training—such as building local institutional capacity, strengthening internal community actors, and developing adaptive strategies that reflect the diversity of participants.

8. Dependency and the Elusiveness of Autonomy

Community empowerment, as articulated by Laverack (2006), involves more than participation or training; it centers on whether a community can ultimately gain control over its own development, including the ability to design, implement, and sustain initiatives without dependence on external actors. In this sense, autonomy is the highest indicator of empowerment. Despite notable progress in increasing knowledge and awareness of digital security among *lansia* through the *Tular Nalar* program, the process has yet to achieve genuine community autonomy. Dependence on facilitators remains high—not only for

technical aspects such as using digital devices, but also for motivation and the initiative to continue independent learning.

After the formal training and subsequent WhatsApp-based support concluded, no organic community structures or local initiatives emerged to maintain learning or facilitate information exchange among *lansia*. There were no established digital learning groups, regular discussion forums, or local *kader* from among the older adults themselves. This indicates that the transfer of roles from facilitators to the community has not occurred.

"At the moment, no, there isn't. Mafindo still operates on a project basis. This is feedback for Mafindo itself." (Interview, June 2024)

This statement underscores the ongoing reliance of *lansia* on facilitators as the primary sources of information and guidance, rather than as peers or community leaders. In Laverack's terms, the program has not reached the stage of "empowerment outcomes"—where the community independently manages and sustains change. Sociologically, this persistent dependency suggests that empowerment remains in a *dependent structural* phase, with external actors still holding the primary locus of control. Local actors—in this case, *lansia*—lack the social and symbolic capital required to self-organize and become drivers of change (Elgamal et al., 2024). Contributing factors may include capacity gaps, the absence of a collective identity as digital learners, or a lack of local institutional support to incubate grassroots initiatives.

Moreover, the lack of long-term sustainability mechanisms—such as ongoing village policy support, routine funding, or cross-sectoral collaboration—hampers the formation of supportive structures that could underpin empowerment over the long term (Adha, Astari, & Suhanda, 2025). Without such structural support, participants are at risk of reverting to passive roles or even forgetting the material they have learned. Thus, while the *Tular Nalar* program has succeeded in initiating empowerment through increased knowledge and social connections, autonomy as the ultimate goal remains elusive. True empowerment, therefore, demands more than just the transfer of information or technical skills; it requires the cultivation of local leadership, sustainable structures, and a cultural environment in which the community can independently thrive and adapt.

D. Conclusion

This study reaffirms that digital empowerment for *lansia* is not merely a matter of enhancing technical literacy, but rather a complex social transformation that is deeply intertwined with local structures, cultural values, and power relations within the community. The application of Laverack's empowerment model in the Indonesian context reveals that initial successes in promoting active participation, expanding information access, and strengthening social ties among

lansia are important—but ultimately insufficient—if not followed by the emergence of collective autonomy and the development of sustainable community structures.

The findings highlight that genuine empowerment is achieved only when *lansia* are recognized and supported as both learners and agents of change. While the *Tular Nalar* program has made significant strides in building digital awareness and fostering a supportive learning environment, persistent challenges remain. These include dependency on external facilitators, uneven digital capacity, structural barriers, and the lack of mechanisms for peer-led learning or community-driven initiatives. These limitations underscore that increasing digital literacy must be understood as a process embedded within the social fabric of the community, demanding strategies that integrate local knowledge, social capital, and ongoing institutional support.

Theoretically, this study extends the relevance of Laverack's model by demonstrating its applicability to the empowerment of older adults in a non-Western, culturally diverse setting. It also makes clear that technical interventions alone are inadequate; empowerment must be rooted in efforts to develop local leadership, encourage active participation from the planning to evaluation stages, and build community-based support systems that are resilient and adaptive to the needs of *lansia*. Practically, the research suggests that future digital literacy programs for *lansia* should go beyond conventional training models by investing in the development of local *kader*, facilitating opportunities for peer-to-peer learning, and establishing sustainable forms of community support. Policymakers and program designers are encouraged to foster multi-actor collaborations involving local government, academic institutions, and civil society, with a focus on ensuring equitable access, cultural relevance, and the strengthening of community bargaining power. Through these efforts, Laverack's framework can be adapted and contextualized to provide a more holistic approach to the digital empowerment of older adults, meeting real-world needs and offering a foundation for further research and practical implementation across diverse regions.

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