Digital Transformation of the Wukirsari Village Library: Improving Community Digital Literacy

Salju[1], Rahmawati[2], Adi Firmanzah[3]*

[1] Management, Postgraduate, University of Muhammadiyah Palopo, Indonesia

[2] Accounting, Faculty of Economics and Business, University of Muhammadiyah Palopo, Indonesia

[3] Development Economics, Faculty of Economics and Business, University of Muhammadiyah Palopo, Indonesia

∗ Suitable Author: adifirmanzah@umpalopo.ac.id

Abstract.

The Wukirsari Village Library located in Yogyakarta focuses on fostering literacy to improve human resource development in rural areas. Some of the most pressing issues with libraries include lack of access to the internet and digital technologies, low levels of digital literacy among community members, limited spatial infrastructure, and reliance on village government budgets. This community service project seeks to understand current efforts to improve the digital literacy framework of Wukirsari villagers and consider the condition of reading rooms and alternative funding solutions to support library activities. The program adopts a Participatory Action Research (PAR) approach that empowers constituents to participate fully from the planning stage to evaluation to shape all aspects of program governance. The results show that access to digital catalogues is only limited to devices within the village library and cannot be accessed via Wi-Fi. Exacerbating the infrastructure deficit in addition to limited operational funds creates a state of constant stagnation for the library. In addition, there is a need for revitalization to make reading rooms more child-friendly that allow adaptive support for diverse literacy activities. Regarding funding, there is an urgent need recognized by managers related to building partnerships with locals and academic institutions.

Keywords: Village library; Digital Transformation; Digital Literacy; Psm; Reading Room Arrangement; Alternative Financing

I. INTRODUCTION

Komarudin & Santoso (2025) Village libraries have a very significant multifunctional role in empowering human resources in rural areas. Not only do these communities lack physical literature to pick up, but they also struggle with access to information at various scales. Community literacy is provided through the village library system which functions as the entrance to basic literacy education (Azzahra et al., 2025).

In Yogyakarta, the Wukirsari Village Library exemplifies several local government efforts to improve community literacy culture. The projected impact of this particular library is to become an informal education hub for children, adolescents, and even adults. As with any institution, access to contemporary literature is essential for village libraries to remain relevant (Yusuf et al., 2022). Therefore, there is an urgent need to respond to social needs such as modern digital technology which has become indispensable (Kurniawan et al., 2023).

The process of digitizing libraries is essential to improve the efficiency of services and the dissemination of information, not just a temporary trend (Setiawan et al., 2025). Unlike libraries in the past, libraries today have transformed into new creatures that serve entirely as emerging social capital infrastructure for their users. Library facilities allow individuals to acquire interpersonal competencies, problem-solving skills and be able to create creative and innovative works that will be used to empower the community in managing their daily environment (Khoirunnisa & Suharso, 2022).

The Wukirsari Village Library has responded to this dynamic by digitizing its repositories and information systems, including developing a bibliographic catalog on a web platform. This is a seemingly initiated stunt about librarians trying to integrate IT with library infrastructure (Dani & Mu'aimanah, 2024). But actual practice shows that when it comes to running a web-based catalog system it's not that easy (Zurna et al., 2022). Until now, users can only access cable services through computer terminals located within the library zone. Thus, it is impossible for individuals to obtain catalog data in their homes or gadgets on their own. These restrictions pose several problems such as making it difficult to access areas located far from libraries and also with inadequate information in a better book circulation system.

Another important existential issue is closely related to the operational financing aspect of the village library. Komariah et al. (2021) To date, the Wukirsari Village Library is fully dependent on the budget allocation from the village government. Because libraries rely heavily on funding, they have no other way to earn money if policies change or funding is cut. As a result, efforts towards financing diversification must be made through partnerships with external parties such as the literacy community, educational institutions and private companies or initiatives such as crowdfunding.

So far, this potential has not been widely utilized by the Village Library Management. Challenges also arise in addition to the digital and financing dimensions, such as in the form of inadequate physical space (Widodo & Syahri, 2023). The available room is also still narrow and not suitable for various activities (Afifah et al., 2023; Putra et al., 2024). The ideal library in the village should be able to read there, have enough light and ventilation, good chairs (of course), place for an organized bookshelf etc. And hopefully a space that allows children to enjoy reading. Unfortunately, the condition of the Wukirsari Village Library is still far from this standard.

These limitations limit managers in arranging more interesting, such as reading classes, digital training, or book discussions (Atmi et al., 2022). In the midst of these challenges, digital transformation efforts remain a step that needs to be prioritized. Information technology can be a solution in expanding the reach of libraries, increasing community participation, and strengthening a more efficient and responsive service system (Zurna et al., 2022). However, effective digital transformation requires a comprehensive approach, not only from a technical perspective, but also touching on aspects of people's digital literacy. There are still many residents who are not familiar with technology, so basic training related to the use of digital devices and online information retrieval is very important.

Based on these conditions, this community service activity aims to provide assistance in strengthening the digital system of the Wukirsari Village Library, increasing community digital literacy, exploring alternative financing strategies, and restructuring more functional spaces. This effort is expected to encourage village libraries as centers for modern literacy that are inclusive, adaptive, and sustainable.

II. METHODS

This community service program is carried out using the Participatory Action Research (PAR) framework, which is an empowerment paradigm that integrates the community as the main actor in a series of processes ranging from problem identification, strategic planning, program implementation, to comprehensive evaluation. This framework was adopted to ensure that the alternative solutions formulated are truly responsive to local contextual needs and can be operated independently by the village community, especially by the manager of the Wukirsari Village Library.

The implementation of the program was carried out at the location of the Wukirsari Village Library, Imogiri District, Bantul Regency, within the span of May 2025. The target population of this

program includes village library administrators, related village officials, and library service users from various demographic segments, including children, adolescents, and adults. The procedure begins with a phase of problem identification and needs assessment through empirical observation and semi-structured interviews with library administrators and service users. From the results of the assessment, several fundamental issues were identified, including limited accessibility to the digital catalog system, low digital literacy capacity of the community, limited library spatial infrastructure, and total dependence on village government funding without a financing diversification strategy.

After the problem mapping was resolved, a focus group discussion was held to design program interventions that included: (1) optimization of a web platform-based digital catalog system, (2) fundamental digital literacy capacity building for the community, (3) restructuring of reading room areas to improve functionality and child-friendliness, and (4) exploration of alternative financing through strategic partnerships and crowdfunding initiatives.

III. RESULTS AND DISCUSSION
Obstacles to Strengthening the Web-Based Digital Catalog System at the Wukirsari Village Library
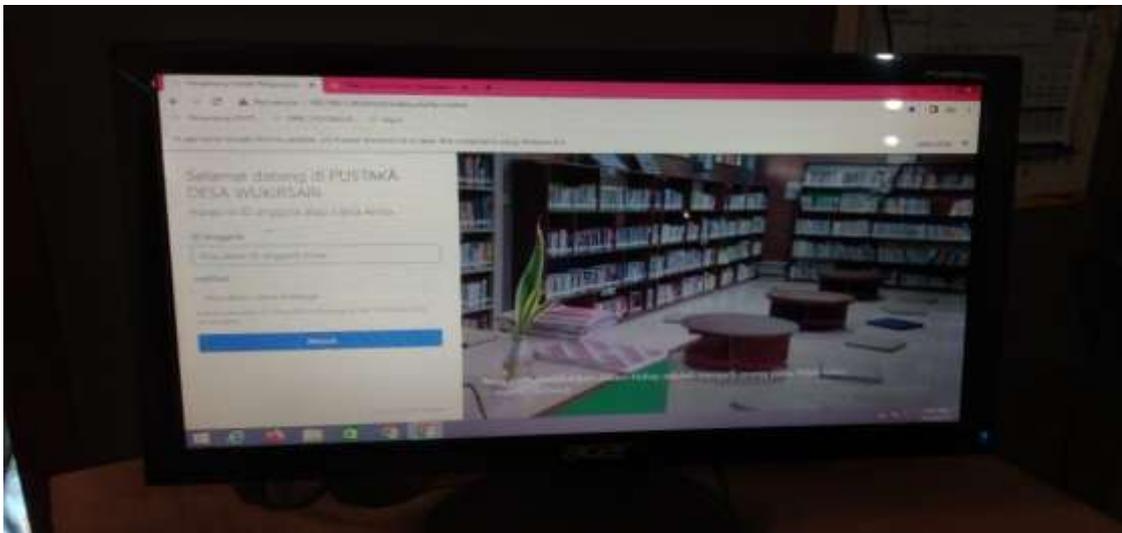

Figure 1. Wukirsari Village Library Web (Book access can only be done at the Computer Library)

Implementation of Web-Based Digital Catalog System Development Case Study: Obstacles and Factors of Wukirsari Village Library Affect the Effectiveness of Technical Side and Additional Infrastructure. And here are the obstacles that should be detailed:

1. Limitations of System Accessibility Digital catalogs cannot be available anywhere in the library area, only from a single PC without an internet connection. Because of this, people cannot access catalog data from anywhere else or even through their personal devices. It is a digital catalog that, despite the characteristics of being in a closed system, does not fulfill its role as public information, but. only internal documentation The problem also becomes more complicated because domains and hosting tend to be privately available so even if they are designed web-based, the implementation doesn't make sense in terms of easily accessible or disclosure of information.

2. Weaknesses of Information Technology Infrastructure The Wukirsari Village Library, on the other hand, has a much more fundamental infrastructure problem with respect to internet stability. The low quality of the internet signal in this area Both remote online system management and direct access for members are hampered by the lack of Wi-Fi, to this day. In addition, there are still some shortcomings of supporting tools such as computers and printers. The library has only one compute unit with limited status that can be used simultaneously by multiple officers or users.

3. Lack of exclusive budget for digital operations. Another significant problem is the absence of special funds provided from the village budget for the development and support of the digital catalog system. The investment comes from the library's operating funds, the same account is used to enable the maintenance of the shelf collection and the acquisition of the collection as well as pay for electricity. This creates demands for things like software patches, domain registration fees, and (for IT) information security training to fall by the wayside.

Basic Digital Literacy Training at Wukirsari Village Library

Figure 2. Basic Digital Literacy Training at Wukirsari Village Library

The implementation of the Basic Digital Literature Program at the Wukirsari Village Library is a form of community service activity oriented towards increasing community empowerment in information and information technology services. This is the impact of the digital divide that almost everyone suffers from; Not only about limited access to technology infrastructure and internet connectivity, but also low competence in operating technology efficiently.

However, a broader indirect consequence of the use that these training interventions expose to their participants is that they contribute to an increase in intrinsic motivation to discover new ways through them exploring the potential applications of these new technologies in everyday life. Some of the informed housewife participants have registered on youtube and gogle search to retrieve more information about cooking, as well as parenting education. In the same way, for young organizations there is a positive attitude towards participation in the creation of digital content and the provision of library information technology services. A comprehensive multidimensional strategy must be implemented for the sustainability of digital literacy improvement. Building a network of digital learning communities; It can be used as a collaborative platform for participants to share ideas and best practice processes with support from a manager or instructor in the library.

Simultaneously, it is important to implement advanced training in specific domain areas that need to be implemented and thought through carefully (e.g., Digital marketing skills for MSMEs; Management and utilization of social media platforms; Educational applications that are in accordance with the requirements of the community). Integrating the digital corner infrastructure in a well-equipped computer lab, with good internet connectivity and a repository of electronic resources will help create the right environment for community members to explore, learn about technology. In addition, youth organizations will be developed to function as agents of change using village-based digital mentoring programs that are expected to maximize the scope and efficacy of technological knowledge delivery to the village level.

Disguised as community driven, we must work together with other outside stakeholders such as local government and higher education institutions as well as non-governmental institutions that

are important for lobbying resource support so that the program can be sustained. This synergy is expected not only to improve the digital technical literacy operations of Wukirsari Village, but has also become a catalyst for community participation in optimizing technology and consolidating the Wukirsari Library as an innovative learning center that is adaptive and accessible to contemporary technological developments.

Rearranging the reading room to make it more functional and child-friendly

Figure 3. Wukirsari Village library room

The Wukirsari Village Library functions as a literacy center for basic communities operating at the grassroots level. The increasing public understanding of the importance of reading along with the needs of non-formal learning has created a strong need for safe and functional literacy spaces. Empirical observations show that the physical infrastructure of reading rooms in village libraries is still far from reaching its optimal standards. Current reading room facilities exhibit many constraints that affect spatial layout and interior design and lighting arrangements and access to supporting infrastructure.

Users experience discomfort that leads to shorter duration of visits especially for children who are the main user group of this suboptimal environment. An in-depth analysis of interviews revealed that children actively joined library programs more during weekends and evenings than any other category of users. The lack of facilities suitable for the convenience of users creates an indirect link between the decrease in the rate of visits and the poor participation rate in the literacy programs implemented. The current disorganized layout of the reading room prevents administrators from creating regular schedules for reading classes and digital literacy training and community discussion forums. The lack of a proper organizational system forces staff members to manually reposition mobile assets and book collections.

Referring to these conditions, the restructuring of the reading room of the Wukirsari Village Library is an urgent necessity. This restructuring needs to be oriented to actualize: Literacy spaces that are ergonomic, have optimal lighting, and meet health standards; Zoning specifically for a safe and stimulating demographic of children; Adaptive multipurpose areas for diversification of literacy activities and capacity building; Provision of child-friendly furniture and the implementation of a systematic collection catalog system.

Through the optimization of spatial arrangement, the library will not only function as a collection warehouse, but also as an inclusive learning space and center for social interaction, which

is able to catalyze the increase in reading interest and digital literacy of the village community in a sustainable manner.

Explore alternative financing through partnerships and fundraising initiatives.

Figure 4. Interview about Financing the operation of the Wukirsari village library

The Wukirsari Village Library faces important operational limitations because it operates with limited financial resources for its development and management. The library administrator revealed in a detailed interview that any operational needs including the maintenance of facilities and the purchase of modern collections and the growth of IT systems depend solely on the village government's budget allocation.

The Administrator stated that the dependence on the village budget resulted in the sustainability and development of the library being vulnerable to the volatility of budget policies and shifts in the priorities of the village government which could undergo temporal changes. As stated by the administrator, "If the village budget is constrained or reallocated for other purposes, library operations are automatically affected, for example the procurement of new collections or the maintenance of digital devices is delayed.

Administrators recognize the urgency of exploring alternative funding sources to support library sustainability. However, until now, efforts to collaborate with external stakeholders such as literacy communities, educational institutions, the private sector, or crowdfunding initiatives still show a lack of progress. The Administrator expects increased support in terms of facilitation and capacity building in the management of financial resources so that this potential can be maximized.

IV. CONCLUSION

The community service program implemented at the Wukirsari Village Library has had a significant impact in increasing the capacity of the village community in the realm of digital literacy and strengthening technology-based library services. Through the training provided, the community began to show a better understanding of operating digital devices, accessing information through the internet, and utilizing digital library catalogs independently. Evidence suggests that rural communities can reduce their digital divide when they use the right needs-based solutions. The strategic development of library services depends on strengthening the digital catalog system because this step leads to service transformation.

Support systems help administrators find technological and non-technological factors that have hindered the availability of information. The library has begun work to develop catalog access through personal devices as a permanent solution to expand the range of its services. During the

service process, it was identified that the operational financing of the library is still comprehensively dependent on the village government budget. This dependence causes various library development programs to often experience delays if there is a shift in village budget priorities. The promotion of diverse funding resources needs to include partnerships between private organizations and educational institutions and literacy communities to achieve sustainable funding diversification.

The findings of the study suggest that the current state of the reading space requires an immediate shift to its spatial organization. The space currently available is not able to withstand the effective level of comfort for children with community study groups who use the facilities. The lack of proper zones in the facilities in addition to inefficient lighting design and lack of supporting facilities hinder the development of efficient literacy activities.

Overall, this community service program not only provides solutions to digital and learning problems, but also offers a space for good discussion and mutual reflection between administrators, communities, and service teams. It is hoped that this project that has been initiated can be the starting point for the formation of a village library that is more responsive to modern advances and more responsive to the needs of the local community.

V. ACKNOWLEDGMENTS

REFERENCE

Atmi, R. T., Gunarti, E., Mutia, F., & Prihatini, I. C. (2022). Improving Community Literacy through Social Inclusion-Based Village Libraries. Journal of Community Service Results Innovation (Jipemas), 5(36), 486–497. Https://Doi.Org/10.33474/Jipemas.V5i3.15559

Azzahra, R. N. A., Restuwulan, T. A., & Chaniago, S. M. (2025). The Role of Tbm Lentera Pustaka: The Literacy and Social Empowerment Movement of Sukaluyu. Indonesian Journal of Teacher Education, 04(01), 1–12.

Dani, A., & Mu'aimanah, U. (2024). Optimization of Village Libraries to Improve Educational Literacy in Kreo Village, Kejajar District, Wonosobo Regency. Journal of Indonesian Community Service (Jamsi), 4(1), 185–192.

Khoirunnisa, V., & Suharso, P. (2022). Women's empowerment through batik training at the Pustaka Sakti Library, Gemeksekti Village, Kebumen Regency. Anuva, 6(3), 293–306.

Komariah, N., Saepudin, E., & Rukmana, E. N. (2021). Social Inclusion-Based Village Library Services at the Jendela Dunia Village Library, Kuningan Regency, West Java, Neneng. Library and Information Science Periodical, 17(1), 112–127.

Komarudin, & Santoso, B. (2025). Conformity of the Village Library in Bukit Intanmakmur Village with the National Library Standards. Jagad Pustaka: Journal of Library and Information Science, 2(1), 1–9.

Kurniawan, Y., Gunawan, & Andriani, W. (2023). Systematic Literature Review: The Application of Smart City in Village Information Systems. Scientific Journal of Informatics and Computers, 2(2), 101–106.

Son, I. P. G. A., Adnyana, I. M. B., & Putri, D. R. (2024). Design and build a web-based digital reading room at the Mengwi Village Library. Sutasoma Journal, 02(02), 105–113.

Setiawan, R., Rusadi, S., Munir, A., Rosyadi, M. I., & Nurhadi. (2025). The Utilization of Website-Based E-Government in the Library of Kampung Perincit, Siak Regency. Journal of Nursing Volumes, 12(5), 2030–2041.

Widodo, N., & Syahri, M. (2023). Development of the Samudra Pustaka Library Collection, Plosorejo Village, Kademangan District, Blitar Nurman Regency. Library and Information Science Periodical, 19(1), 152–167.

Yusuf, A. M., Rukmana, E. N., & Rohman, A. S. (2022). Processing of library materials using the Slims application at the Library of the Youth Organization Secretariat in Jatimukti Village, Jatinangor District. Iqra': Journal of Library and Information, 16(1), 142–162.

Zurna, H. P. B., Rini, F., & Pratama, A. (2022). Web-Based Library Information System. 2(1), 5–10.