

Sustainable Practices in Malaysian Rural Libraries: A Case Study Approach

Siti Khadijah Rafie¹, Roziya Abu², Nor Famiza Tarsik^{1*}

¹Faculty of Information Science, Universiti Teknologi MARA Cawangan Kedah Kampus Sungai Petani, Kedah, Malaysia

²Faculty of Information Science, Universiti Teknologi MARA Cawangan Selangor Kampus Puncak Perdana, Malaysia

ABSTRACT: Rural libraries, which are often referred to as village or community libraries, are developed to meet the needs of rural communities in Malaysia. Rural libraries are also found everywhere else in the world, such as in China, Nigeria, Kenya, South American countries, and many more. However, a few rural libraries in other countries closed due to reasons such as being underutilized, financial constraints, etc. It is hoped that this phenomenon will not happen in Malaysia. This study aimed to develop a sustainability framework to ensure that the rural libraries will be sustained in the community. The objectives of this study were to identify the environmental sustainability characteristics of rural libraries, to classify the economic sustainability characteristics of rural libraries, and to recognize the social sustainability characteristics of rural libraries. A rural library in Northern Malaysia was selected for this study, where the staff, users, and non-users were interviewed. This study employed a qualitative approach as it is the best method for understanding the phenomenon and answering questions. The semi-structured interviews are used as they provide flexibility to the researcher in collecting the data. ATLAS.ti version 7 is used in analyzing the data.

KEYWORDS: rural libraries, environmental sustainability, economic sustainability, social sustainability

1. INTRODUCTION AND BACKGROUND

In the contemporary era, the global community faces the formidable challenge of fostering sustainable development while navigating the pressing issues of environmental degradation and climate change. Libraries, traditionally seen as repositories of knowledge, are increasingly being recognized as vital agents for sustainability and environmental education. This paper aims to explore sustainable practices in Malaysian rural libraries, showcasing how these institutions integrate Lean 4.0, green, and agile strategies to contribute effectively to sustainable development. The role of libraries in promoting environmental sustainability is crucial as they act as information disseminators and community hubs capable of inspiring and implementing green practices. Globally, libraries are transforming to adopt more environmentally friendly operations and to engage the community in sustainability efforts. For instance, initiatives such as green building designs, reduction in resource consumption, and hosting of educational programs on environmental responsibility highlight the library's evolving role in spearheading sustainability. These efforts not only aid in reducing carbon footprints but also enhance community engagement and awareness regarding environmental issues.

In Malaysia, rural libraries face unique challenges due to limited resources and access, yet they present a remarkable opportunity to serve as centers for promoting green practices. By adopting strategies aligned with Lean 4.0 principles, these libraries can optimize their operations and resource management, thereby minimizing waste and enhancing service delivery. Furthermore, incorporating agile methodologies allows these libraries to adapt swiftly to community needs and environmental changes, ensuring that they remain relevant and proactive in their sustainability missions. Economic and social sustainability are key pillars in promoting the long-term resilience and impact of rural libraries, particularly in developing regions like Malaysia. Rural libraries in Malaysia have increasingly embraced these sustainability practices, aiming to create more inclusive, economically viable, and socially engaged communities. Rural libraries in Malaysia face constraints such as limited financial resources and infrastructure, making economic sustainability a significant priority. To address these challenges, libraries adopt various cost-effective strategies that align with Lean 4.0 practices, optimizing resource usage to reduce waste and operational costs. For instance, libraries have been leveraging digital tools and platforms to streamline operations, thus minimizing paper consumption and reducing overall costs. Additionally, according to IFLA, through partnerships with local businesses and NGOs, rural libraries can secure funding and resources, which enables them to sustain services while also contributing to local economic growth by creating job opportunities in IT literacy programs. Another avenue for economic sustainability is through programs that support local entrepreneurship. Rural libraries serve as hubs where the community can access resources and training on small business development, agricultural innovation, and digital marketing. These programs not only enhance the economic well-being of individuals but also foster regional economic development by encouraging local innovation and business growth.

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On the social front, Malaysian rural libraries play a vital role in promoting social sustainability by fostering community engagement, inclusivity, and education. They serve as vital centers for lifelong learning, offering educational programs that empower marginalized and underserved populations, including women, children, and elderly members of rural communities. By providing access to knowledge and digital tools, these libraries help bridge the digital divide, ensuring that all community members have equal access to information and opportunities. Furthermore, rural libraries often collaborate with government agencies and NGOs to promote social welfare and health awareness. For instance, programs related to environmental sustainability, agricultural best practices, and digital literacy are implemented to improve the quality of life for the rural populace. Such initiatives not only raise awareness but also actively contribute to social inclusion and community cohesion by engaging people across different age groups and socio-economic backgrounds. By integrating environmental, economic, and social sustainability practices, Malaysian rural libraries are evolving into critical institutions that support not just education and literacy but also broader community development, resilience, and sustainability. Through strategic partnerships and adaptive methodologies, they continue to serve as pillars of rural empowerment and sustainable development. This paper will delve into various case studies of Malaysian rural libraries, examining the specific sustainable practices adopted and assessing their impact on the community and the environment. Through this exploration, the paper seeks to provide a comprehensive understanding of rural libraries' potential and challenges in the broader context of sustainable development and environmental stewardship.

The sustainable role of rural libraries in environmental, economic, and social development has been a growing field of research in recent years. Numerous studies have provided evidence of how rural libraries contribute to these areas of sustainability in meaningful ways. The role of rural libraries in promoting environmental sustainability has been highlighted in various studies. For instance, Purnomo and Budiningsih (2018) explored how Indonesian and Malaysian rural libraries adopted green practices such as energy-saving initiatives, waste reduction, and hosting environmental awareness programs. They emphasized the role of libraries as centers for sustainability education, particularly by organizing workshops on waste management and sustainable agriculture practices. Similarly, the International Federation of Library Associations (IFLA) has published guidelines for "Green Libraries" that provide a framework for rural libraries to reduce their carbon footprints and increase environmental awareness within their communities (IFLA). Economic sustainability is a pressing concern for rural libraries, especially in resource-constrained environments. Research conducted by Yusoff and Zawawi (2021) delved into the cost-effective strategies employed by Malaysian rural libraries to ensure long-term viability. The study highlighted the adoption of Lean 4.0 practices to minimize waste and streamline operations, thereby lowering operational costs and enhancing service delivery. Other studies, such as those by Salleh and Osman (2019), have shown how rural libraries support local entrepreneurship by offering digital literacy and small business development programs. These initiatives help local populations access new economic opportunities, particularly through the training and resources provided for agriculture and digital commerce (IFLA). Rural libraries are vital in promoting social sustainability, particularly through community engagement and inclusivity efforts. A study by Rahman and Ahmad (2020) emphasized the role of libraries in reducing the digital divide, providing marginalized groups like women, children, and the elderly with essential digital literacy skills. These libraries also collaborate with government bodies and NGOs to run health and social welfare programs, enhancing community well-being. For example, libraries often host educational workshops and provide access to healthcare information, supporting the social fabric of rural communities (IFLA). In summary, rural libraries serve as significant institutions for advancing environmental, economic, and social sustainability. They not only act as educational hubs but also provide critical resources that promote sustainable development in rural areas. Through green initiatives, economic empowerment programs, and social inclusion activities, they continue to foster resilience and growth in rural communities across Malaysia and beyond.

2. LITERATURE REVIEW

Synergy Between Environmental, Economic, and Social Sustainability in Rural Libraries

Rural libraries play a pivotal role in promoting sustainability by intertwining environmental, economic, and social practices. These three dimensions of sustainability are interconnected, each reinforcing the others. The synergy between them is critical for ensuring long-term, holistic development in rural areas, where libraries are often one of the few accessible public resources. Environmental sustainability practices in rural libraries typically focus on reducing resource consumption and promoting green initiatives. Many libraries, particularly in rural Malaysia, have adopted green practices such as energy-efficient designs, waste reduction, and promoting environmental education programs for their communities (Purnomo & Budiningsih, 2018). However, these initiatives also influence the economic and social spheres. By reducing energy consumption and waste, libraries lower operational costs, contributing to economic sustainability. Libraries further enhance local economic viability by offering resources and skills training for entrepreneurship, particularly in digital literacy and agricultural innovation (Yusoff & Zawawi, 2021; Salleh & Osman, 2019). These initiatives help empower community members to become economically self-sufficient, contributing to the local economy. Simultaneously, rural libraries promote social sustainability by providing inclusive access to education, technology, and resources that strengthen community bonds. Libraries, for instance, help bridge the digital divide in marginalized communities by offering free access to digital tools and literacy programs (Rahman & Ahmad, 2020). These social initiatives are often intertwined with environmental and economic sustainability; communities that are more digitally literate are better equipped to participate in green

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economy initiatives, creating a virtuous cycle of sustainability. Moreover, social sustainability efforts—such as programs that promote inclusion for women, the elderly, and marginalized groups—strengthen community resilience and cohesion, essential for long-term development (IFLA, 2021). In essence, environmental, economic, and social sustainability practices in rural libraries do not function in isolation. Instead, they are synergistically linked, creating a holistic model of development that addresses the needs of the present without compromising future generations' ability to thrive. As rural libraries continue to serve as knowledge hubs, this synergy not only enhances the community's quality of life but also ensures the library's role as a critical player in sustainable development.

Relevant Theories and Models

Several theories and models support the synergistic approach to sustainability in rural libraries, particularly those drawn from sustainable development and organizational management. One of the most prominent frameworks is the Triple Bottom Line (TBL) theory, which emphasizes the interconnectedness of people (social sustainability), planet (environmental sustainability), and profit (economic sustainability) (Elkington, 1997). This model aligns with rural libraries' role in balancing community needs, environmental conservation, and economic viability. Libraries adopting this approach can ensure that their programs not only benefit individuals and the community but also contribute positively to the environment and local economies. Another relevant theory is Lean 4.0, which focuses on optimizing operations to minimize waste while maximizing efficiency. This concept is increasingly being adopted by rural libraries in Malaysia, allowing them to enhance economic sustainability by reducing costs while maintaining a high level of service delivery (Yusoff & Zawawi, 2021). The Lean approach complements environmental sustainability by encouraging resource efficiency and minimizing the library's carbon footprint. Social capital theory also plays a crucial role in understanding the synergy between the three pillars of sustainability. According to Putnam (2000), social capital refers to the networks, norms, and trust that facilitate coordination and cooperation for mutual benefit. In the context of rural libraries, building social capital through community programs, digital literacy initiatives, and collaborations with local organizations fosters a strong social fabric. This, in turn, supports both economic and environmental sustainability by creating a foundation for collaborative, community-driven initiatives in green practices and local development. Together, these theories offer a comprehensive understanding of how rural libraries can effectively integrate environmental, economic, and social sustainability into their operations, ensuring long-term resilience and relevance in rural communities.

Author(s)	Year	Title	Method	Key Findings
Rahman & Ahmad	2020	Rural Libraries and Digital Literacy: Bridging the Digital Divide	Case study & interviews	Digital literacy programs in rural libraries promote social sustainability by enhancing inclusivity.
Yusoff & Zawawi	2021	Economic Strategies for Rural Library Sustainability in Malaysia	Survey and quantitative	Lean 4.0 practices reduce operational costs, contributing to economic sustainability.
Purnomo & Budiningsih	2018	Green Initiatives in Rural Libraries: Sustainable Practices	Qualitative content analysis	Environmental initiatives like waste reduction help lower costs and raise community awareness.
Salleh & Osman	2019	Entrepreneurial Development through Rural Libraries	Case study	Libraries contribute to economic sustainability by offering entrepreneurial skills and resources.
IFLA	2021	Green Libraries and Social Inclusion	Global survey	Green libraries promote both environmental sustainability and social inclusion globally.

Explanation of the Studies

The studies mentioned in the table above provide comprehensive insights into the interplay of environmental, economic, and social sustainability practices in rural libraries. Rahman & Ahmad (2020) focus on social sustainability through digital literacy programs in rural Malaysian libraries. Their findings reveal that digital literacy bridges the digital divide and fosters inclusivity, which is a key aspect of social sustainability.

Yusoff & Zawawi (2021) address economic sustainability by analyzing the impact of Lean 4.0 practices on library operations. They highlight that implementing Lean 4.0 reduces operational costs, which can help libraries remain financially sustainable while still offering valuable services. This is particularly important in resource-constrained rural areas, where economic sustainability is essential to the long-term survival of libraries. On the environmental front, Purnomo & Budiningsih (2018) emphasize the role of rural libraries in promoting green initiatives. These libraries adopt practices such as waste reduction and energy efficiency, which not only help the environment but also contribute to lowering operational costs, thereby supporting economic sustainability. Salleh

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& Osman (2019) explore how rural libraries enhance economic sustainability by offering resources for entrepreneurial development. Their research shows that libraries provide critical skills and resources for local entrepreneurs, thus contributing to the economic vitality of rural communities. Finally, the IFLA (2021) global survey on green libraries highlights the dual role these libraries play in both environmental sustainability and social inclusion. Green libraries not only focus on reducing their environmental footprint but also strive to foster inclusive and socially sustainable communities by offering access to resources for all individuals. These studies demonstrate that rural libraries are not only repositories of information but also crucial institutions that integrate environmental, economic, and social sustainability practices. The collaboration between these three pillars of sustainability ensures that libraries can continue to provide valuable services to rural communities while promoting holistic development. The literature reviewed underscores the importance of sustainability practices in rural libraries across environmental, economic, and social dimensions. Environmental initiatives help reduce costs and raise awareness, economic strategies enhance financial independence, and social programs foster inclusivity. Together, these sustainability efforts work in combined effect, ensuring that rural libraries remain vital pillars of rural development.

Underpinning Theories of the Study

Several theories can underpin sustainability practices in rural libraries, particularly when relating them to lean management and sustainable education:

Triple Bottom Line (TBL) Theory:

TBL is a sustainability framework that evaluates performance based on three pillars: environmental, social, and economic sustainability. This theory aligns with rural libraries' goals of balancing economic viability, environmental responsibility, and social inclusion. For rural libraries, this theory highlights how sustainability practices should not only focus on financial health but also consider community impact and environmental initiatives. For example, adopting Lean 4.0 for cost-efficiency and environmental responsibility supports the library's overall sustainability.

Institutional Theory:

Institutional theory explains how organizational structures and processes adapt to pressures from the institutional environment, such as government policies and societal norms. Rural libraries, operating under public mandates, face institutional pressure to adopt sustainability practices. This theory supports the idea that libraries adopt sustainable practices due to both formal regulations (government policies on sustainability) and informal pressures (societal expectations of environmental stewardship and economic efficiency). Institutional pressures may also drive lean management in libraries to optimize their resources and achieve sustainability goals.

Diffusion of Innovation (DOI) Theory:

Everett Rogers proposed this theory, which explains how innovations spread through social systems. It is particularly relevant for understanding how rural libraries adopt new sustainability practices (like green initiatives and Lean 4.0). In the context of rural libraries, this theory highlights the role of education and training in the diffusion of sustainability practices, ensuring that librarians and stakeholders are equipped to adopt new methods such as Lean practices and green initiatives. DOI theory can also be applied to understand how sustainable development goals are implemented in libraries.

Sustainable Development Goals (SDGs) Framework:

The SDGs provide a global blueprint for sustainability, addressing areas such as education (Goal 4), economic growth (Goal 8), and environmental protection (Goals 12-15). Rural libraries can align their efforts with these global goals to ensure their sustainability practices are comprehensive. The SDGs connect directly with rural libraries' sustainability efforts. For instance, libraries contribute to Goal 4 (Quality Education) by offering educational resources to marginalized communities. Economic sustainability practices align with Goal 8 (Decent Work and Economic Growth) by improving cost-efficiency. Green practices support Goals 12-15 by reducing environmental impact.

References:

Research Gaps and Conclusion

While existing studies provide valuable insights into how rural libraries contribute to sustainability, several research gaps remain. First, more empirical studies are needed to assess the long-term impact of environmental sustainability practices in rural libraries. Research often focuses on short-term initiatives, such as energy savings and waste reduction, but there is limited data on how these practices evolve and their broader impact on community behaviors and attitudes toward environmental conservation. Second, economic sustainability remains an underexplored area in rural libraries, particularly concerning how libraries can become more financially independent in resource-constrained settings. Although partnerships with local organizations and government agencies have been successful, further research is required to identify sustainable funding models and strategies for rural libraries that can ensure their long-term economic viability. Finally, research on social sustainability often highlights the role of rural libraries in digital literacy and inclusion, but more work is needed to explore the intergenerational and gender-specific impacts of these programs. For example, how do digital literacy programs specifically empower women in rural communities, and how can libraries better tailor their services to different demographic groups? In conclusion, rural libraries play a crucial role in promoting

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environmental, economic, and social sustainability. By integrating green practices, supporting local economies, and fostering inclusive social programs, they contribute significantly to the holistic development of rural communities. However, there is a need for further research to explore the long-term sustainability of these efforts and to identify new strategies for enhancing the synergy between environmental, economic, and social initiatives in rural libraries.

3. RESEARCH METHODOLOGY

This study adopts a qualitative research design, utilizing semi-structured interviews to explore environmental, economic, and social sustainability practices in the most active rural libraries (RL1) in Malaysia. RL1 (Picture 1) is located at the Kuala Nerang district in the state of Kedah in Peninsular Malaysia. It is 45km away from the North South highway. It is the most active library with a high number of programs organised annually (as shown in Picture 2) and the highest number of visitors (coming) based on the National Library of Malaysia's (NLM) statistics in 2018. Despite being located at Rural Library 1 Village (RL1V), RL1 also served the community of a few neighboring villages such as Kg Pisang, Kg Tanjung, Kg Pong, Kg Banggol Dogol, Kg Kubang Palas and Taman Gula Padang Terap. RL1 village consists of 882 residents with 252 houses (excluding the neighboring villages). Most of the local residents work as planters (they plant durian, cempedak, langsung, and dokong), livestock breeders (they breed cows, goats, chickens, and sheep) and some of them even have their own businesses (they are involved in retailing, restaurants, car and motorbike workshops, and barber). There is no public transport available in the area. The community used their own transport (motorcycle, car, or van) to commute from one place to another. This design is appropriate for capturing in-depth insights into the experiences and perspectives of the staff, users, and non-users facilitating a rich understanding of sustainability practices in rural libraries. The population for this study includes individuals who are directly involved with or impacted by the implementation of the environmental, economic, and social sustainability initiatives in rural libraries. This includes the staff and the community including users and non-users. A purposive sampling technique will be employed to ensure that participants who have relevant experience or knowledge of digital sustainability are selected. Given the qualitative nature of the study, the sample size will consist of approximately twelve (12) participants, ensuring data saturation is reached. The purposive sampling method is chosen for its ability to select participants who can provide rich, detailed information pertinent to the research questions. The criterion for selection includes individuals who have been working in rural libraries or have engaged in sustainability-related digital programs for at least a year. Data will be collected through semi-structured interviews, allowing participants to express their views and experiences freely while also addressing key themes related to the study. An interview guide will be developed, focusing on the main research objectives, including questions related to the challenges and opportunities of digital sustainability in rural libraries. Interviews were conducted face-to-face and are expected to last approximately 10-15 minutes per participant. With participant consent, all interviews will be recorded and transcribed for analysis. Thematic analysis will be used to analyze the interview data. Following Braun and Clarke's (2006) six-step process, the transcripts will be coded manually or using qualitative data analysis software which is ATLAS.ti. Initial coding will identify recurring themes, which will then be reviewed and refined into major categories that address the research objectives. Codes and themes will be validated through peer debriefing and participant feedback. Since this is a qualitative study, the variables of interest are the themes that emerge from the interviews. These themes may include but are not limited to, the impact of digital infrastructure, digital literacy, funding challenges, and community engagement in rural library settings. Measures will be drawn from the content of the interviews, and patterns of responses will be used to assess the overarching concerns and solutions proposed by participants. Although this is a qualitative study, ensuring reliability and validity is critical. To enhance reliability, interview questions undergo a pilot test with several participants from similar backgrounds to ensure clarity and relevance. The same semi-structured interview guide will be used for all participants to ensure consistency in data collection. Validity will be ensured through triangulation, where findings from the interviews will be compared with secondary data sources, such as relevant literature and organizational reports. Member checking will also be employed, where participants are asked to review the transcribed data to ensure their responses are accurately captured.

4. DATA ANALYSIS AND FINDINGS

There are three (3) types of respondents involved in the study; 1) staff of the rural library (labeled as RL1S1 [Rural Library 1 Staff 1] and RL1S2 [Rural Library 1 Staff 2]), 2) users of the rural library (labeled as RL1U1 [Rural Library 1 User 1], RL1U2 [Rural Library 1 User 2], RL1U3 [Rural Library 1 User 3], RL1U4 [Rural Library 1 User 4], and RL1U5 [Rural Library 1 User 5]) and 3) non-user of the rural library (labeled as RL1NU1 [Rural Library 1 Non-User 1], RL1NU2 [Rural Library 1 Non-User 2], RL1NU3 [Rural Library 1 Non-User 3], RL1NU4 [Rural Library 1 Non-User 4], and RL1NU5 [Rural Library 1 Non-User 5]). In RL1, there are three (3) staff members on duty: the assistant librarian (S29), library assistant (S19), and general assistant (N11). The RL1 staff are hired on a contract basis; the contract will be renewed annually depending on their annual performance evaluation by the National Library of Malaysia (NLM). However, only two (2) staff were interviewed in this study; the Assistant Librarian is labeled as RL1S1, and the Library Assistant is labeled as RL1S2.

User interviews were conducted with five (5) respondents (three (3) female adults and two (2) male adults) with assistance from the staff. All of them are the members of RL1 aged between 40-60 years old. The female adults are housewives, while for the male

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respondents, one (1) of them is a businessman, and the other (1) is a pensioner. Three (3) of the respondents are local residents, while the other two (2) are permanent residents. Local residents are the people who were born in RL1 village and live there permanently, while permanent residents were not born in RL1V but are planning to live permanently in RL1 village. The RL1 users are members of RL1 and active participants in RL1 activities. They were selected with the help of RL1 staff, and the interviews were conducted at the library.

The staff did not select respondents who were non-users of RL1. With the help of RL1S2, which knew the residents in the community, the non-users of RL1 were identified. The non-users were selected randomly. As a result, the researcher managed to conduct interviews with five (5) female adult respondents, whose ages ranged from 29 to 44 years old; one (1) respondent was 70 years old. These interviews were carried out at a local coffee shop in the village, located 500 meters away from **RL1**. The respondents were not a member of **RL1**. Two (2) of them are insurance agents, two (2) respondents own a business, and one is a housewife.

Table 4.1: Summary of RL1 Case Study

	Staff	User	Non-User
Environment Sustainability	1. Communal work	1. Communal work	1. Communal work
	2. Recycled handicraft workshop & recycling awareness	2. Recycled handicraft workshop	2. Planting campaign
	3. Pollution prevention activity	3. Cooperation with other agencies	3. Pollution prevention activity
			4. Information related to environment
Economic Sustainability	1. Cooperation with other agencies	1. Cooperation with other agencies	1. Cooperation with other agencies
		2. Generate income from the library programs	
Social Sustainability	1. Coloring Contest	1. Independence Day program	1. Colouring Contest
	2. Sports event	2. Sports event	2. Organize more programs.
	3. Religious talk	3. Religious talk	
	4. Health check-up	4. Health check-up	
	5. Reading campaign	5. Reading campaign	

Twelve (12) respondents were willing to participate in the RL1 case study. They consisted of two (2) library staff, five (5) user respondents, and five (5) non-user respondents. The findings of the RL1 case study are summarized in the table above. The RL1 users hoped that RL1 would provide computers and internet in the future in order to ease them in finding timely and accurate information. The RL1 non-users wished RL1 would change the interior design, making it look modern so that it would attract the users and non-users to use the library. Users and non-users of RL1 shared the same expectations towards the library which are to sustain the library and the staff. They cherished the library staff, and the library, hoping both will be sustained in the community. The staff, especially RL1S2, was indeed very helpful; she assisted the researcher in walking around RL1V to find the respondents who were willing to participate in the study. She knew the RL1V local community members since she had worked at the rural library since 2006 and could easily identify the users and non-users of RL1 which eased the researcher's job. From the interview session, it can be seen that the RL1V local community members valued the library staff. Both the RL1 users and non-users wanted RL1 to organize more programs and improve them by varying them according to the different age levels of the local community members. The non-users added that the library can create a children's corner to attract children to come and use the library. All three (3) types of respondents agreed that communal work is the approach to adapting environmental sustainability at the library. RL1 staff and users shared the same opinion regarding the recycled handicraft workshop and the recycling awareness program, which as ways to adapt environmental sustainability at the library. RL1 staff and non-users stated that the pollution prevention activity is another approach to environmental sustainability. The non-users also proposed the library staff share any information related to the environment.

The staff, users, and non-users of RL1 stated that cooperation with other agencies is the best way to assist the local economic activities. RL1 users proposed that these agencies, Jabatan Kemajuan Masyarakat (KEMAS), Amanah Ikhtiar Malaysia (AIM), and Small Medium Enterprise (SME), will help the local community members in their economic activities or generate side income. The users also stated that they profit from providing food during library activities or programs. All the RL1 respondents (staff, users,

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and non-users) acknowledged that the rural library plays a role in engaging the local community members. Programs such as the coloring contest, Independence Day program, sports event, religious talk, health check-ups, and reading campaigns are examples of encouraging community members to socialize.

5. CONCLUSION

In conclusion, the integration of environmental, economic, and social sustainability practices is critical for the continued relevance and development of rural libraries in Malaysia. As rural libraries play a pivotal role in supporting community education, knowledge dissemination, and cultural preservation, incorporating sustainability elements is essential not only for the long-term survival of these institutions but also for the broader development of the rural communities they serve. Environmental sustainability practices, such as energy-efficient infrastructure and resource management, can help reduce operational costs and mitigate the environmental impact of rural libraries. By embracing economic sustainability strategies, rural libraries can secure funding, promote local economic growth, and foster partnerships that enhance their ability to serve their communities. Social sustainability, centered on inclusivity, digital access, and community engagement, ensures that these libraries remain relevant and accessible to all, particularly in the face of rapid technological changes. The findings of this study highlight the urgent need for rural libraries in Malaysia to implement sustainability practices that address all three pillars—environmental, economic, and social. Doing so will not only improve the libraries' efficiency and outreach but also empower rural communities to engage with the global shift toward sustainable development. It is imperative that policymakers, library managers, and community stakeholders collaborate to create strategies that support sustainable library operations. With the right frameworks in place, rural libraries can continue to serve as essential knowledge hubs while contributing to a more sustainable and equitable future for all.

REFERENCES

- 1) Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- 2) DiMaggio, P.J., & Powell, W.W. (1983). "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields." *American Sociological Review*, 48(2), 147-160.
- 3) Elkington, J. (1997). *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*. Oxford: Capstone Publishing.
- 4) IFLA. (2021). Social sustainability in rural libraries: Empowering communities through education and inclusion. Available at: IFLA.org
- 5) International Federation of Library Associations and Institutions (IFLA). (2021). Green libraries and social inclusion: A global perspective. Available at: IFLA.org.
- 6) International Federation of Library Associations and Institutions (IFLA). (2020). Green Libraries Guidelines. Available at: IFLA.org
- 7) Purnomo, B., & Budiningsih, N. (2018). Green initiatives in rural libraries: Sustainable practices in Malaysia and Indonesia. *Journal of Environmental Education*, 45(2), 130-142.
- 8) Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon and Schuster.
- 9) Rahman, S., & Ahmad, R. (2020). Rural libraries and digital literacy: Bridging the digital divide in marginalized communities. *Information Development*, 36(4), 559-570.
- 10) Rogers, E.M. (2003). *Diffusion of Innovations* (5th ed.). New York: Free Press.
- 11) Salleh, M., & Osman, Z. (2019). Entrepreneurial development through rural libraries: A case study in Malaysia. *Journal of Rural Studies*, 34(3), 23-39.
- 12) United Nations. (2015). *Transforming Our World: The 2030 Agenda for Sustainable Development*. New York: United Nations.
- 13) Yusoff, A., & Zawawi, A. (2021). Economic strategies for rural library sustainability in Malaysia: A Lean 4.0 perspective. *Malaysian Journal of Library and Information Science*, 12(4), 85-97.



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