



Journal of Advanced Research in Computing and Applications

Journal homepage:
<https://karyailham.com.my/index.php/arca/index>
ISSN: 2462-1927



Towards Digital Inclusion: Assessing the Availability of Digital Literacy, Collaboration and Partnership and Community Engagement for Digital Technology (DT) Sustainability in Pahang Rural Public Library (RPL)

Roziya Abu^{1,*}, Mad Khir Johari Abdullah Sani¹, Zaherawati Zakaria², Siti Khadijah Rafie³,
Shamshuritawati Sharif⁴

¹ Faculty of Information Science, Universiti Teknologi MARA (UiTM), Selangor, Malaysia

² Faculty of Administrative Science and Policy Studies, Universiti Teknologi MARA (UiTM), Sg Petani Campus, Malaysia

³ Faculty of Information Science Universiti Teknologi MARA (UiTM), Sg Petani Campus, Malaysia

⁴ College of Arts and Sciences, Universiti Utara Malaysia, 06010 UUM Sintok, Kedah, Malaysia

ARTICLE INFO

Article history:

Received 16 July 2025

Received in revised form 20 August 2025

Accepted 31 August 2025

Available online 8 September 2025

Keywords:

Digital technology; digital literacy;
collaboration; community engagement

ABSTRACT

Digital Inclusion refer to the practices that ensure the individual and community could have access on the digital technologies. The rural public library plays a significant role to ensure that the rural community could have access on the digital technologies and its services. However, there are rural communities that least connected and included in using the digital technologies due to the lack of digital infrastructure, lower average levels of education and skills as well as low of socioeconomic status. Therefore, this research purposely to assessing the availability digital technologies works such as digital literacy program, collaboration and partnership on technology usage and community engagement with digital technology towards digital technology sustainability in Pahang state rural public libraries. The qualitative research approach has been adopted by conducting the interview session with librarian to explore the digital technologies availability in the Rural Public Libraries (RPL) in Pahang. The findings show that there are various digital literacy programs has been organized by Pahang rural public libraries in accessing the digital technologies. Besides that, RPL also collaborates and partnerships with other agencies in supporting the library service to serve the community. The findings also show that the librarian within the rural public library creates the engagement with the community by assisting the library user using government applications. Further suggestion has been discussed to make sure the rural community will engage with the digital technologies without any exclusion particularly in Malaysia. The significance of this study is to ensure that the rural community could receive the benefits that have been given by the government to engage with the digital technology in the digital era.

1. Introduction

* Corresponding author.

E-mail address: roziya307@uitm.edu.my

<https://doi.org/10.37934/arca.39.1.212225>

Nowadays, the digital technology is the most important platform or digital to the community to communicate through social media and searching for information in digital platforms. The usage of the digital technology has been used by various generation purposely for seeking information, communication and interaction through social media, using the artificial intelligence (AI), gaming and other activities common do by this generations. Technology has transformed the mode of the communication and has changes the ways to seeking information from physical into the online platforms. This shift of the traditional version of communication and seeking information has give huge impact towards better management, efficiency and effectiveness within the community. Moreover, this kind of transformation also could seek and disseminate information to the huge participation in digital platforms.

The spread usage of social media has changed the ways of individual to communicate and interact with other people. Several platforms of social media such as X (previously known as Twitter), Facebook, Instagram, TikTok has become the central point to communicate with other people. Moreover, this social media platform not only been used for communication, but also able to be sharing and disseminate the information, market the product, engage with customers and other activities that able the individual to engage with huge number of digital audiences or participants. The convenience and immediacy of this social media has become the primary channel to disseminate and communicate with other people in all ages.

Besides that, the digital technology plays a significant role to seeking and sharing the information to others. The evolvement of digital technologies changes the traditional ways of seeking and sharing information into advancement ways by share using various kind of platform that can be access world widely. The dynamic methods in seeking and sharing information make the information could reach to the global audience in one times. There are various platforms for seeking information such as online database, online news, social media, web portal and other sources. While, for sharing information, the platform like YouTube could share the information like podcast program in thousand of audience. The advancement technology required support from its users whether in urban and rural areas.

The role of rural public library is important to engage the rural community with the advancement technologies. The digital technologies give impact towards the development of society where the rural people able to see online news without pay for the physical newspaper. Besides that, the rural people able to see the latest entertainment in the social media. However, there are also categories within the rural community unable to engage with the digital technologies because of insufficient skill and knowledge and digital illiterate to access on the digital technologies like smartphones. Besides that, the digital gap like insufficient digital infrastructure has hinder the rural community to interact in online platforms. Therefore, the rural public library plays significant role for rural community engage with digital technology such as internet, social media and using the smartphone in the right ways.

Therefore, this article would like to assess the availability digital technologies works such as digital literacy program, collaboration and partnership on technology usage and community engagement with digital technology for the rural community able to engage with digital technology. From this study, digital divide could be reduced because the rural public library plays their role to make sure rural people engage with digital technology. Besides that, this study also will be empowering the education to support lifelong learning among the rural community nowadays. The rural people able to seek information as well as able to participate in any online class that organized by education institutions nationally or internationally. This ways indirectly could empower the rural people until able to produce the knowledgeable society in the future.

2. Literature Review

2.1 Defining Digital Inclusion

Digital Inclusion refer to the process of connect and access of the computing technology to better serve and services to the individual and communities [17]. Bosua and Gloet [1] state that digital inclusion refers to the social inclusion in 21st century that ensures the individual and disadvantaged group has ability to access and skill on the Information, Communication and Technologies (ICT) until it could be benefit for the growth of knowledge and information within the society. Meanwhile, United Nation [19] mention that digital inclusion defined as equitable, meaningful and safe access to use, lead and design the digital technologies, services and associated opportunities for everyone, everywhere. Previous scholar has various definition on the digital inclusion and from that perspective, it shows that the digital inclusion refers to the accessibility, skill and knowledge of individual and communities towards the current digital technology. The definition also highlighted that the accessibility of the digital technology by individual or disadvantaged group that unable to access to the technology because of their socioeconomic or have low standard of living.

2.2 Defining Digital Technology and Sustainability

The term “digital technology” refers to the various categories of tools, services and applications and technologies that use various or different kind of hardware and software [16]. Chahabra [3] state that digital technology represents all technological gadget, automated system, electronic instrument and number of resources that capable to generate, process and store information in online platform. While Devran and Elçi [5] defined digital technology as the digital tools, system, devices and resource that able to generate, process and store the data such as social media, multimedia, online gaming and others associated with the technology. There are various of definition of digital technologies that has been discuss by the scholar over the year. It shows that digital technologies could represents all technologies such as digital tools, system and application that has capabilities to generate, process and store data as well as information digitally. The emergence of digital technologies has changed the technological environment of community nowadays towards sustainability in the future. The usage of digital technology within the community is necessary to stay relevant with current digital era world widely.

Meanwhile, the word sustainability has been defined by United Nation Brundtland Commission since 1987 where this commission defined “sustainability” as concept that meeting the needs of present without compromising the ability of future generations to meet their own needs [18]. Hernandez-Moreno and De Hoyos-Martines [6] state that the sustainability refers to the need or satisfaction of the current society without compromising the need of future generations. While, Cambridge dictionary [2], defined sustainability refers to the quality and ability to continue over a period of time. The sustainability represents the need of the community by focus the key issues towards community development for the future. Nowadays, the various countries targeted the sustainability development as their mainly goals to meet their development needs. Various fields such as agriculture, education, manufacturing, applied science, information science, medical and others begun to embed the concept of sustainability with their fields as an alternative ways to solve the issues as well as relevant with current agenda of sustainability.

2.3 Digital Inclusion in Malaysia

In Malaysia, the digital inclusion could be referred to the rural community group that may have the difficulties to access on the digital technology because of lack on internet infrastructure and lower socioeconomic status. According to Iqbal *et al.*, [8], Malaysia still catching up the digital changes where Malaysia begun to include the digital technology within the business as well as society. There are various technologies has been introduced for community to using the digital technology such as online banking, using apps for health (MySejahtera), Gallery of Malaysian Government Mobile Applications (GAMMA), e-licenses for driving license and many more. However, there are still a group of Malaysian community specifically in rural areas that left behind and become digital exclusion. Digital exclusion refers to the individual at risk and excluded from access and use of digital technology [13]. According to Horn and Gifford [7], lack of access of ICT in remote and rural areas in Malaysia will hinder the economic and social development. This is some of the scenarios occurs in the Malaysia and Rural Public Library has become the hub that they could connect the rural community with the digital technologies.

2.4 Rural Public Library Services

Rural Public Library (RPL) is one of the central hub that serve for the community to access on the book, news, internet connectivity, computer and other digital tools. The RPL commonly located in rural areas that provide the wide range of services and program like personal education, civic education for various generations as well as a place to filling their free times [21]. The RPL also a place for the rural student intends to visit this places to complete their task or study for their examination. Other than that, this RPL also will serve the communities by organized the programme or workshop that related with digital literacy programme, online safety, reading related activity, storytelling and others kind activities that beneficial to the society.

Besides that, the RPL also one of the places or platform that foster social inclusion and social engagement within their rural areas. This platform has been used for meeting, communicate wither in physically or online platforms. This central hub also plays a significant role particularly for culture enrichment and lifelong learning among the community. Various initiatives have been implemented by RPL for culture enrichment and lifelong learning such as historical exhibition, Cultural Night, digital literacy and technology integration and others kind of related activities been organized in RPL. All the community members should frequently come to the rural public library not only to read the book but also for social engagement with other people.

2.5 Digital Literacy, Collaboration and Partnership and Community Engagement in Rural Public Library

Nowadays, the rural public library not only provide the services related with book, but this places also organized programme related with digital literacy, implement the collaboration and partnership with others local agency as well as organized programme for community engagement. In term of digital literacy, rural public library serves as a platform to educate the rural community to use the digital technology effectively for search and find, create information as well as evaluate the information. Based on Kelly, McGrath and Hubbard [9], the public libraries could cultivate the digital skill of rural youth and indirectly could bridging the rural-urban digital divide. Meanwhile, Ali *et al.*, (2019) state that using the digital education platform, rural public libraries able to upgrade the digital skill and knowledge of rural people and could contributing towards improvement of human capital within the rural areas.

In term of collaboration and partnership, the rural public library has capabilities to collaborate and partnership with local agency or organization for expand their network. This is the good practices and strategies to collaborate with other local agencies especially on the program related with sharing information, co-hosted for training and workshops, mobile library services and other kind of activities between this two parties. Some of example in term of collaboration in which the RPL could collaborate with any telecommunication agencies in which these agencies could improve the technological infrastructure of the rural public library. According to Deguzman *et al.*, [4], rural public libraries could collaborate with healthcare institutions to improve the healthcare access within the rural areas in a trustworthy location. Besides that, through this collaboration the healthcare institution could share knowledge regarding the health lifestyle, disease and its treatment to the rural community and directly could increase the knowledge of rural people regarding the healthy lifestyle.

In term of community engagement, rural public library plays a significant roles as community gatherings, learn and share the experiences. Engaging with the local communities not only RPL organized the program and provide the excellent services to them, but the RPL also need to understand the need of rural communities, encouraging any good feedback, organized cultural activities and conducting storytelling program and forum to them, to come to the RPL. By organizing these kinds of activities, this will enhance the bond and communication within the local community as well as local leader. The active engagement with the local community could make this organization stay relevant and active and local community willing to participate and enjoy the activities organized by rural public library in rural areas.

3. Research Methodology

This paper has employed the qualitative research approaches by conducting the structured interview session with the librarian at RPL particularly in Pahang, Malaysia. Qualitative research approach defined as method of investigating that focus on the experience and interpret the individual experience and behavior through in-dept interview and observation [10]. The informants have been interviewed by researcher to assessing the availability of digital literacy, collaboration and partnership and community engagement for digital technology sustainability within the rural public library services in this state.

Table 1

Number of Informants

No	Indicator of the Informants	Position	Organization
1.	RPL1	Assistant Librarian (S29)	Perpustakaan Desa Bandar Indera Mahkota (Zon C 01)
2.	RPL2	Assistant Librarian (S29) / Supervisor Zon 2	Perpustakaan Desa Kg. Teluk Sentang
3.	RPL3	Assistant Librarian (S29)	Perpustakaan Desa Seberang Chenor
4.	RPL4	Assistant Librarian (S29) / Supervisor Zon 4	Perpustakaan Desa PNM Kg New Zealand
5.	RPL5	Assistant Librarian (S29)	Perpustakaan Desa PNM Kampung Bukit Betong
6.	RPL6	Assistant Librarian (S29)	Perpustakaan Desa Kg Perpat
7.	RPL7	Assistant Librarian (S29)	Perpustakaan Desa Kg Pulau Rusa
8.	RPL8	Assistant Librarian (S29) / Supervisor Zone 9	Perpustakaan Desa Masjid Kg Relong

Through the qualitative data collection, the number of informants only **eight (8)** of the librarians that was participated in this study as well as eight (8) location of rural public libraries particularly in

Pahang state. The number of sample size sufficient because of their position and experience related with managing of rural public library in Pahang state. This link with the statement by that state the traditional qualitative research practices utilized the fixed numerical thresholds in which commonly suggested sample size within 5 – 30 participants per group. Table above show the indicator and location of RPL that already been assess in this study.

4. Findings and Discussion

The qualitative data was analyzed to investigate the availability of digital literacy programs, collaboration and partnerships as well as community engagement to support the digital technology sustainability in the rural public library. In this qualitative data from interview session with the librarian, there are three main elements that will be assessed which are digital literacy program, collaboration and partnership as well as community engagement.

4.1 Digital Literacy Program

Digital literacy programs related to the activities that have been organized by the rural public library to attract users to visit the rural public library in their areas. Digital literacy refers to a set of skills that are related to the use of technology to enable users to evaluate, find, organize, create and communicate the information and indirectly create the digital citizenship and the responsible use of technology [14]. The activity associated with digital literacy programs is essential to enhance their digital technology skills, computer skills, surfing and browsing skills and online safety. These activities are significantly important for library users to explore the new information using the digital tool as well as appropriate skills that have been educated by the rural public library.

In this study, the researcher wants to analyze the digital literacy program organized by a rural public library in the Pahang state. The statement from the librarian states there are various digital literacy programs organized in rural public libraries in Pahang states. In terms of the development of digital technology skills of the user, several activities program to enhance the digital technology of library users within the rural communities. The findings highlight that all the rural public libraries (RPLS 1, RPLS 2, RPLS 3, RPLS 4, RPLS 5, RPLS 6, RPLS 7 and RPLS 8) have conducted the program known as *Sistem Pembelajaran Kendiri Literasi Media dan Maklumat (Sistem e-LMM)*. Based on the statement of RPLS 1, RPLS RPLS 2, RPLS 3, RPLS 4, RPLS 5 and RPLS 7 has state that this RPL has organized the ICT Literacy program such as online quiz. While other programs such as eBusiness Workshop also been organized by RPLS1, RPLS 3, RPLS 5, RPLS 6 and RPLS 7. The statement of the librarian for each of the rural public library as follow:

“Rural Public Library (RPL) Zon C1 in Pahang organized various programs, workshops, or activities that focus on developing digital technology skills for library users with the aim of increasing access to technology and educating the local community about right and effective use digital technology applications. Some activities have been conducted here, such as eBusiness Workshops, ICT Literacy Activities, Soduku, ICT Test Activities, e-sports and online quizzes.” (mention by RPLS 1)”.

“This rural public library also holds programs, workshops, or activities that focus on the development of digital technology skills for users with the aim of increasing access to technology and educating the local community about proper and effective use such as E-LMM (known as Media and Information Literacy Self-Learning System). In addition,

virtual activities like Virtual Quiz Program are held every month on our library Facebook Page and publicized to the public for participation purposely to encourage library users with the use of digital technology.” (mention by RPLS 2)

“Rural Public Library Zon 3 at the Maran and Rural Public Library Zon 8 at the Bera also hold programs, workshops, or activities that focus on the development of digital technology skills for users with the aim of increasing access to technology and educating the local community about proper and effective use such as the eBusiness Workshop, Click Wisely Program, Advertising Workshop and AI Module and IT Literacy Activities.” (mentioned by RPLS 3)

“Rural Public Library Zone 4 also holds programs, workshops, or activities that focus on the development of digital technology skills for users with the aim of increasing access to technology and educating the local community about correct and effective use such as ICT Quiz conducted virtually on Facebook RPL Kg New Zealand, Workshop Using ICT physically at RPL Kg Kuala Sentul, Promotion and u-Library Membership Campaign by Rural Public Library Kg Senggora. (mentioned by RPLS 4)

“Rural Public Library Zon C5, Pahang also holds programs, workshops, or activities that focus on the development of digital technology skills for users with the aim of increasing access to technology and educating the local community about proper and effective use such as eBusiness Workshops, ICT Quizzes, Access to U-Library etc. (mentioned by RPLS 5)

“The Rural Public Library in Zone C6 Pahang also holds programs, workshops, or activities that focus on the development of digital technology skills for users with the aim of increasing access to technology and educating the local community about correct and effective use such as e-Census Briefing, Online Entrepreneur Course, Pahang Zakat Application Briefing via online at RPL Bandar Tun Razak, Shopee Entrepreneur Course at RPL Tg Gemok and IT Quick Workshop at RPL Simpang Sepayang”. (mentioned by RPLS 6)

“Rural Public Library Kg Pulau Rusa also holds programs, workshops, or activities that focus on developing digital technology skills for users with the aim of increasing access to technology and educating the local community about proper and effective use such as the U-Library Campaign and the Kg Product Entrepreneurship Workshop and ICT Quiz at RPL Lamir”. (mentioned by RPLS 7)

“Rural Public Library Zon 9 also holds programs, workshops, or activities that focus on the development of digital technology skills for users with the aim of increasing access to technology and educating the local community about proper and effective use such as the u-Pustaka Workshop”. (mentioned by RPLS 8)

In terms of development of **user computer literacy skills**, the majority librarian state that the rural public library will ensure that the necessary skill is equipped to the library user regarding the computer literacy program. RPLS 1, RPLS 2, RPLS 3, RPLS 4, RPLS 5, RPLS 6, RPLS 7 and RPLS 8 state that RPL will equip the library user with the computer literacy skills, so library user learns and

understands about the computer literacy. While RPLS 8 state the activity that organized by Rural Public Library Masjid Kg Relong such as learn about Microsoft Office, Canva and others. As follows the statement by Rural Public Library Staff (RPLS):

The programs at our library also help to ensure that rural communities have the necessary skills by collaborating with the Rural Internet Center (PID) to implement computer literacy programs. (mentioned by RPLS 1, RPLS 2, RPLS 3, RPLS 4, RPLS 5, RPLS 6, RPLS 7, RPLS 8)

The programs at RPL Zone 9, Pahang also help to ensure that rural communities have the necessary skills such as the use of Microsoft Office, Canva and others by collaborating with the Rural Internet Center (PID) and the Malaysian Family Digital Economy Center (PEDi) to implement computer literacy programs. (Mentioned by RPLS 8)

For the **internet browsing skills**, the RPL organizes a program related to internet browsing skills for the library users, to ensure the user can surf the internet in a safe and good manner. All the librarians which are RPLS 1, RPLS 2, RPLS 3, RPLS 4, RPLS 5, RPLS 6, RPLS 7, and RPLS 8 state that their RPL has organized a program related with the internet browsing purposely to improve users' digital literacy. RPLS 5 states that the program related to internet browsing is CLICK wisely. The statement is as follows by all librarians:

"This RPL also organizes a program related to internet browsing to improve users' digital literacy, to ensure they can use the internet in a safe and responsible manner". (mentioned by RPLS 1, RPLS 2, RPLS 3, RPLS 4, RPLS 5, RPLS 6, RPLS 7, RPLS 8)

"PNM Village Library Zone C5, Pahang also organizes a program on internet browsing to improve users' digital literacy, to ensure they can use the internet in a safe and responsible manner. For example, CLICK wisely". (Mentioned by RPLS 5).

While, regarding the **education about online safety**, majority of the rural public library in Pahang state does not organize any program related to online safety to the rural community. However, only librarian or officer in RPL has given exposure regarding the online security. The following statement by RPLS 1, RPLS 2, RPLS 3, RPLS 4, RPLS 5, RPLS 6, RPLS 7 and RPLS 8 mention the same statement in which:

"In terms of consumer education about online safety, no program like that but the librarian and officer only been given exposure and brief on the online safety" (mention by RPLS 1, RPLS 2, RPLS 3, RPLS 4, RPLS 5, RPLS 6, RPLS 7 and RPLS 8).

The findings show that all the librarians (RPLS 1, RPLS 2, RPLS 3, RPLS 4, RPLS 5, RPLS 6, RPLS 7 and RPLS 8) state that various digital literacy programs organized in rural public libraries in Pahang states. Some of the activities related to technology like ICT Literacy activities, online surfing and browsing skills to improve the digital literacy skill of rural communities in Pahang states. Each of RPL may have different activities that have been organized, however, there are also similar activities organized in RPL. Some of the similar activities such as eBusiness workshop, ICT Literacy related

activities and *Aktiviti Galakan Membaca (AGM)* were organized to increase the awareness towards the technology awareness and usage among library users in Pahang state. Based on the findings, it also was discovered that RPLS 1, RPLS 2, RPLS 3, RPLS 4, RPLS 5, RPLS 6, RPLS 7 and RPLS 8 also try to educate the library user on the computer literacy like conducting Microsoft Office and Canva workshop and conducting the program related with skill on browsing the internet wisely such as program CLICK wisely. However, in terms of online safety, all the rural public libraries state that only their officer that received the exposure on online safety but not the community itself. It is important to educate to increase the awareness to rural communities on the risk on using the digital technology nowadays.

The findings show that the rural public libraries have already organized a program to educate the library user in developing the digital technology skill. This been supported by the Martzoukou and Elliott [12] that state public librarian required to additional the library user with the technical skill to promote the digital literacy as well as could understand the need of the community itself. This is significantly important for the library user to equip with the appropriate skill to create a knowledgeable society. These kinds of skills will benefit the rural community to seek the right information on the internet in avoiding the misinformation gain on the internet. Moreover, the findings discover that the RPL does not organize programs related to the online safety, data privacy and security and cybersecurity as awareness to the communities to use the technology in the right ways. It is significantly important to educate the rural communities on the risk using the digital technology wrongly.

4.2 Collaboration and Partnership

Collaboration and partnership in the context of this study is the collaboration of the library with other organizations as well as agencies in supporting the library service to serve the community. According to Luccy, Brophy and Lawson [11] the libraries play an essential role in economic development by forming the partnership with government agency and non-profit organizations to assist the rural populations. The collaboration of the rural public library will show the visibility and transparency on the role of rural libraries to deliver the information services to the community. In this study, several RPL have been assessed to explore and investigate the collaboration and partnership exist in the RPL in Pahang states.

The finding shows that all the rural public libraries providing the continuous education through collaborative program to provide learning for communities like “Sistem Pembelajaran Kendiri Literasi Media dan Maklumat (Sistem e-LMM)”. Besides that, others initiative by rural public libraries that collaborate with local government agency is program “Aktiviti Galakan Membaca (AGM)”. The statement as follows:

“Rural Public Library Pahang collaborates with government and non-government agencies in providing continuous education through collaborative programs to provide learning to the local community, for example through the Sistem Pembelajaran Kendiri Literasi Media dan Maklumat (Sistem e-LMM). Besides that, the rural public libraries also state that the collaboration also includes the program like Aktiviti Galakan Membaca (AGM).” (mentioned by RPLS 1, RPLS 2, RPLS 3, RPLS 4, RPLS 5, RPLS 6, RPLS 7 and RPLS 8)

For the program about the “Sistem Pembelajaran Kendiri Literasi Media dan Maklumat (Sistem e-LMM)”, RPLS 8 mentions that there are several levels that have been divided which are basic,

intermediate and advanced level. From this finding show that the rural public libraries can identify the library users that could use the digital technology at basic level as well as advance level. Based on the statement of RPLS 8:

“Through this learning system, it is divided into 3 levels which are basic level, intermediate level and also advanced level suitable for various levels of society.”

RPLS 2, RPLS 3, RPLS 4 and RPLS 8 mention the local government agency that they have been collaborate has assist them in organizing the program especially related with any application introduced by the Malaysia Government. Several local government agencies that have been collaborate with rural public libraries in Pahang states are nurseries, schools, *Jawatankuasa Pembangunan dan Keselamatan Kampung (JPKK)*, mosques and suraus, community association, primary school, secondary school, kindergarten, KEMAS, FELDA, TABIKA, youth association, farmer association, *Kawasan Rukun Tetangga (KRT)* and other agencies that associated with the community. The statement by the librarian from the RPLS 2, RPLS 3, RPLS 4 and RPLS 8. The statement as follows:

“Rural public library in Zone 2 at Temerloh is heavily involved with agencies with collaboration programs with nurseries, schools, JPKK and nearby mosques or suraus.” (mentioned by RPLS 2).

“The library does a lot of networking and cooperation, including with schools, nurseries, JPKK and Persatuan Penduduk as well as other agencies according to the program carried out.” (mentioned by RPLS 3).

“Among the agencies involved are Primary School, Middle School, Unity Kindergarten, Kemas Kindergarten, Kawasan Rukun Tetangga (KRT), Jawatankuasa Pembangunan dan Keselamatan Kampung (JPKK), KEMAS, Farmers' Association, Women's Association of Small Farmers (PWPK), Village Clinic, Mosque, Women's Association Association (GPW) and Village Youth Association, Felda and agencies close to the Village Library Zone 4 community, Pahang.” (mentioned by RPLS 4).

“RPL Zone 9, Pahang often collaborates with various government and non-government agencies in implementing Reading Encouragement Activities (AGM) programs such as TABIKA, schools, JPKK and any other interested agencies. The cooperation from those parties is very helpful for the implementation of the AGM both in terms of funds and support services.” (mentioned by RPLS 8).

The findings show that all the rural public libraries (based on statement RPLS 1, RPLS 2, RPLS 3, RPLS 4, RPLS 5, RPLS 6, RPLS 7, RPLS 8) have collaboration and partnership with the local government agencies and non-government agencies for the implementation of the program “Sistem Pembelajaran Kendiri Literasi Media dan Maklumat (Sistem e-LMM)” and “Aktivit Galakan Membaca (AGM)”. RPL 8 also added some information on “Sistem Pembelajaran Kendiri Literasi Media dan Maklumat (Sistem e-LMM)” which consist of basic level, intermediate level and advanced level suitable for various levels of society. Through this collaboration, the RPL and local government agency could promote the lifelong learning to the community for rural community development. A knowledgeable society could be created if this collaboration and activity consistently been organized by the RPL and local government agency. While RPLS 2, RPLS 3, RPLS 4 and RPLS 8 also mention the

organization that they already collaborate consist of *Jawatankuasa Pembangunan dan Keselamatan Kampung (JPKK)*, KEMAS, FELDA, TABIKA, *Kawasan Rukun Tetangga (KRT)* and others organization. This kind of collaboration and partnership with the local government agencies and non-profit organization will significantly be essential to promote the lifelong learning within the rural community in Pahang state. According to Osuchukwu and Edewor [15], collaboration between the libraries and community-based organizations could enhance information delivery and indirectly promote sustainable development within the rural communities.

4.3 Community Engagement

Community engagement is the process of working collaboratively with community members as they are library customers, residents, faculty, students or partner organizations for the betterment of the community. This definition has been adopted from American Library Association that want the library play a significant role to serve the community as a knowledgeable community for better future. The data analysis was exploring the activities that has been conducted by each of the rural public library to serve the community towards sustainability especially with the disruption with digital technology in library services.

The findings show that the librarian within the rural public library creates the engagement with the community by assisting the library user using government applications such as PADU apps. The librarian will assist the community on how to be using this application, in which this application is important because a part of Malaysian Government Initiative that contains profiles of individuals and households covering citizens and permanent residents aged 18 and above in Malaysia. This statement has been mentioned by RPLS1, RPLS4, RPLS 5, RPLS 6 and RPLS 7:

"In our library, the staff will interact with users, especially regarding information literacy through PADU registration at selected RPLs." (statement by RPLS1)

"Rural Public Library Zone 4 also interacts with users especially in relation to information literacy through PADU registration at selected RPLs, namely RPL Kg Kuala Sentul". (statement by RPLS 4)

"PNM Village Library Zone C5, Pahang also interacts with users, especially regarding information literacy through PADU registration at selected RPLs."

"Rural public library oversee by me in the Zone C6 also interacts with users especially in relation to information literacy through PADU registration at selected RPL which is RPL Simpang Sepayang." (statement by RPLS6)

"RPL Zone C7 Pahang also interacts with users especially regarding information literacy through PADU registration at selected RPLs." (statement by RPLS7)

While RPLS 2, RPLS3 and RPLS 8 also engage with the community using the new application that was introduced by the government like PADU. However, it is different from other RPLS because RPLS 2, RPLS3 and RPLS 8 collaborated with the local government on how to be using the PADU application. Based on RPLS 2:

"All RPL in Temerloh Zone 2 also interact with users especially regarding information

literacy through PADU registration at RPL Tg Kerayong on 25/3/2024, RPL Bintang 26/3/2024, RPL Batu Sawar 27/3/2024 and at RPL Teluk Sentang on 29/3/2024. We also cooperate with local authority District Statistics Department to successfully implement this PADU registration."

Same with rural public library in area of Chenor. According to RPLS 3:

"RPL Zone 3 and Zone 8 also engage with users especially regarding information literacy through PADU registration at selected PDs. The PADU counter was opened for the first time at the Rural Public Library Sri Buntar in collaboration with the JPKK Sri Buntar on March 14, 2024. In addition, the Rural Public Library Batu Papan was also involved with the PADU registration counter on March 23, 2024. The PADU received great benefits to ensure the community in the form of assistance or protection.

Staff in Perpustakaan Desa Masjid Relong collaborate with Jerantut District Statistics Department to explain and make sure the community register the PADU apps. Based on RPLS 8:

"Our rural public library also interacts with users, especially in relation to information literacy through PADU registration in selected RPLs such as the RPL Bukit Nikmat Kg, Jerantut in collaboration with the Jerantut District Statistics Department. The program received a very encouraging response throughout the two days the program was held."

Based on the interview session with the informants or participants shows that all the staff in RPL actively engage with the library user especially assisting the library user in using one of the applications that recently been introduced by the government agency called PADU. The findings show that RPLS1, RPLS4, RPLS 5, RPLS 6 and RPLS 7 engage with the community and assist them on how to use this application. This application known as PADU significantly important to fulfil by Malaysia citizen because for profiling the citizen in Malaysia as well as to ensure that Malaysia citizen receive benefits in the form of assistance or protection (if eligible) from various citizen-focused government initiatives. While RPLS 2, RPLS 3 and RPLS 8 engage with the local community as well as government agency to make sure this application will fulfill by Malaysian citizen. The findings state that the significant collaboration with the community is essential to educate the community in using digital technologies in their daily lives. Welser, Khan and Dickard [20] state that the online learning communities and social support could be beneficial to the communities itself because could improve their digital skills among the rural population.

5. Conclusion

As a conclusion, the rural public library plays a significant role in assisting the rural community to engage with digital technology particularly by using the smartphone, social media as well as internet. In this study, the finding reveal that the rural public library in Pahang has conducted the program related for digital literacy, collaboration and partnership with local agency and always engage with the community. The program like eBusiness Workshops, ICT Literacy Activities, Soduku, ICT Test Activities, e-sports and online quizzes will give positive impact on the usage of the technology to the rural community nowadays. These activities could enhance the skill and knowledge of rural people to use the smartphone and internet in properly way. These kind of activities also will be beneficial towards the producing the future knowledgeable society in Malaysia. Besides that, the collaboration and partnership with local agency with rural public library to encourage the staff within the agency

for reading habit through the implementation of program "Reading Encouragement Activities". However, rural public library does not organize programs related to the online safety, data privacy and security and cybersecurity as awareness to the communities to use the technology in the right ways. The rural public library should organize an online safety program to the rural community for them to learn the right ways to use the technology and avoid any involvement towards malicious activities such as phishing, online scammer, data theft, love scammer and other activities. This is essential to educate the rural community to use the internet and protect their digital data in the right ways.

Acknowledgement

This paper is funded by the Fundamental Research Grant Scheme (FRGS), Ministry of Higher Education Malaysia. Reference Number: 600-RMC/FRGS 5/3 (151/2022).

References

- [1] Bosua, Rachele, and Marianne Gloet. "Access to flexible work arrangements for people with disabilities: An Australian study." In *Anywhere working and the future of work*, pp. 134-161. IGI Global Scientific Publishing, 2021. <https://doi.org/10.4018/978-1-7998-4159-3.ch006>
- [2] Cambridge dictionary (2024). Sustainability. Retrieved May 2025, from: <https://dictionary.cambridge.org/dictionary/english/sustainability>
- [3] Chahabra, A. (2022). How is digital technology reshaping different sectors of society? *Schneider Electric*. Retrieved May, 2025, from: <https://blog.se.com/sustainability/2022/06/30/how-is-digital-technology-reshaping-different-sectors-of-society/>
- [4] DeGuzman, Pamela B., Setareh Aboali, Neha Jain, Alec Scicchitano, and Zachary C. Siegfried. "Improving equitable access to care via telemedicine in rural public libraries." *Public Health Nursing* 39, no. 2 (2022): 431-437. <https://doi.org/10.1111/phn.12981>.
- [5] Devran, Begüm Çubukçuoğlu, and Alev Elçi. "Traditional versus digital assessment methods: faculty development." *Assessment, Testing, and Measurement Strategies in Global Higher Education* (2020): 20-34. <https://doi.org/10.4018/978-1-7998-2314-8.ch002>
- [6] Hernández-Moreno, Silverio, and Jesus De Hoyos-Martinez. "Indicators of urban sustainability in Mexico." *Theoretical and Empirical Researches in Urban Management* 5, no. 7 (16 (2010): 46-60.
- [7] Horn, Christine, and Sandra M. Gifford. "ICT uptake and use and social connectedness in rural and remote communities: a study from Sarawak, Malaysia." *Information Technology for Development* 28, no. 4 (2022): 721-746. <https://doi.org/10.1080/02681102.2021.2021844>.
- [8] Iqbal, Muhammad Saqib, Zulhasni Abdul Rahim, and Naoki Ohshima. "Enhancing workforce performance and applications toward Industry 5.0 with the 5G conceptual framework in Malaysia." *Journal of Advanced Research in Applied Sciences and Engineering Technology* 31, no. 3 (2023): 282-289. <https://doi.org/10.37934/araset.31.3.282289>
- [9] Kelly, Wayne, Brian McGrath, and Danielle Hubbard. "Starting from 'scratch': Building young people's digital skills through a coding club collaboration with rural public libraries." *Journal of Librarianship and Information Science* 55, no. 2 (2023): 487-499. <https://doi.org/10.1177/09610006221090953>.
- [10] Kitchin, Rob. "Cognitive maps." *International Encyclopaedia of Social and Behavioural Sciences* 3 (2001): 2120-2124. <https://doi.org/10.1016/B0-08-043076-7/02531-6>
- [11] Luccy, Diane, Julie Brophy, and Bland Lawson. "Building Thriving Communities: The Library's Role in Economic Development." *Journal of Library Administration* 64, no. 3 (2024): 298-307.. <https://doi.org/10.1080/01930826.2024.2316521>.
- [12] Martzoukou, Konstantina, and Joanneke Elliott. "The development of digital literacy and inclusion skills of public librarians." *Communications in information literacy* 10, no. 1 (2016): 5. <https://doi.org/10.15760/COMMINFOILIT.2016.10.1.17>.
- [13] Morato, Jorge, Alejandro Ruiz-Robles, Sonia Sanchez-Cuadrado, and Miguel Angel Marzal. "Technologies for digital inclusion: Good practices dealing with diversity." In *Handbook of research on comparative approaches to the digital age revolution in Europe and the Americas*, pp. 332-351. IGI Global Scientific Publishing, 2016.: <https://www.igi-global.com/chapter/technologies-for-digital-inclusion/138042>
- [14] Museum and Library Services Act of 2010 (2010)., Pub. L. 111-340, 22 Dec. 2010.

- [15] Osuchukwu, Ngozi Perpetua, and Nelson Edewor. "Stimulating and enriching partnership with community based organizations: inclusive participatory platform with libraries in Nigeria." (2017)..
- [16] Rice, Mitchell F. "Information and communication technologies and the global digital divide: Technology transfer, development, and least developing countries." *Comparative Technology Transfer and Society* 1, no. 1 (2003): 72-88. <https://doi.org/10.1353/ctt.2003.0009>
- [17] Rovia, A. P. & Petchauer, E., M. (2008). The Digital Divide and Social Equity. *Handbook of Research on Public Information Technology* (pp.8). ICI Global Scientific Publishing. <https://doi.org/10.4018/978-1-59904-857-4.ch028>
- [18] United Nations (1987). *Sustainability*. Retrieved May 2025, from: <https://www.un.org/en/academic-impact/sustainability>
- [19] United Nations. (2022). *Updated. Digital inclusion*. Available from: Definition_Digital-Inclusion.pdf (un.org)
- [20] Welser, Howard T., M. Laeeq Khan, and Michael Dickard. "Digital remediation: Social support and online learning communities can help offset rural digital inequality." *Information, Communication & Society* 22, no. 5 (2019): 717-723. <https://doi.org/10.1080/1369118X.2019.1566485>.
- [21] Yari, Shiva, and Mohammad Amin Bahrami. "The Role of Rural Public Libraries in Empowering and Developing the Rural Community." *Research on Information Science and Public Libraries* 30, no. 2 (2024): 140-156. <https://doi.org/10.61186/publiij.30.2.140>