

Reliability Assessment of Users Expectations and Perceptions on Rural Library Rebranding Measurement Constructs

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ABSTRACT

Globally, the evolving roles of rural libraries in the digital age have also redefined their traditional roles from knowledge repositories into community and digital service hubs. Due to their evolving roles, rebranding that extends beyond service transformation and facility upgrades may provide a strategic approach to repositioning these institutions to remain sustainable and relevant. Nevertheless, significant gaps still exist in terms of understanding how rebranding initiatives and rural library services align with users' expectations and perceptions. This study aimed to assess the preliminary internal consistency reliability of the measurement instrument developed to measure users' expectations and perceptions of rebranding factors and service quality, along with community development outcomes in the context of selected rebranded rural libraries in Malaysia. This study adopted a quantitative pilot study design using a structured questionnaire as the primary research instrument involving 38 respondents who were users of a selected rebranded rural library. Cronbach's Alpha was used to assess the reliability of the constructs. Overall, both constructs and most dimensions met the criteria and demonstrated acceptable to excellent internal consistency. However, the Affect of Service dimension within the perception subscale under the Service Quality construct recorded a negative Cronbach's Alpha. Further item-level analysis revealed only a single problematic item, indicating the need for further refinement of this item. Overall, the analysis provided preliminary support for the internal consistency reliability of the instrument while identifying an item requiring further attention prior to its broader application.

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INTRODUCTION

Pilot testing, which is widely referred to as a small-scale preliminary assessment of research instruments, plays an important role in quantitative research design by allowing researchers to assess the

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reliability and practicality of the measurement instrument. This study focuses on evaluating the reliability and practicality of the instrument developed to measure users' expectations and perceptions towards rebranding factors and service quality at selected rebranded rural libraries for community development in the digital age, prior to the main data collection. Previous studies highlighted the evolving roles of rural libraries beyond their traditional roles into dynamic community hubs that significantly provide digital access, community learning activities, social inclusion, and sustainable development for the community (Yari & Bahrami, 2024). These changing roles of rural libraries were also influenced by the emergence of digital initiatives and technologies, aimed at promoting digital inclusion (Strover et al., 2020). The rural libraries' evolving roles are crucial in positioning these institutions as dynamic community information hubs that can support community development. These changes emphasised the need for rural libraries to sustain and stay relevant through sustainable design, flexible learning, and engagement spaces (Palmer, 2021; Meena, 2024). Rural libraries in Malaysia have been established since 1993 and have continued to develop, with a total of 1,076 rural libraries nationwide as of December 2024 (NLM, 2024). Despite this substantial development and long establishment of rural libraries, particularly in the digital age rebranding has emerged as a strategic approach that is significant in ensuring the relevancy and sustainability of these institutions. Although empirical studies on library rebranding remain limited, interestingly a number of studies have highlighted the importance of marketing, branding which are collectively related to rebranding. Sahli et al. (2023) emphasised on how branding and marketing strategies help libraries in adapting to the changing information environment, enhancing their value, and ensuring their relevancy in a competitive landscape. Collectively, studies by Sahli et al. (2023), Kraujalienė & Kromalcas (2022) and Zhang (2021) indicate that library rebranding is a holistic process associated with key branding dimensions, integrating marketing communication, and physical and human-centred elements. As this study emphasises users' expectations and perceptions of rebranding factors and service quality at the selected rebranded rural libraries for community development, a pilot test was conducted for assessing the internal consistency reliability of the measurement instrument prior to the main data collection. The reliability of the instrument was assessed using Cronbach's Alpha.

1.1 Problem Statement

Consequently, in response to the identified gaps, this study addresses the following key research problems (i) underutilisation of rural libraries; (ii) lack of evolving concept of rural libraries in digital age; and (iii) limited evaluation on expectations & perceptions in rural library rebranding for community development. In terms of underutilisation and low visibility issues, in contrast Abu et al. (2023) and Shaifuddin et al. (2022) highlighted how empowering rural libraries is crucial for sustainable development which is a broader concept which closely related to community development. Studies by Metwally et al. (2025) and Samsuddin et al. (2021) further emphasise the need to provide services that extend beyond conventional traditional book lending to include digital access, skills development training, and entrepreneurship. Without addressing these gaps, rural libraries in the Malaysian context, in particular, will continue to face cycles of underutilisation and limited impact on community. The second problem statement meanwhile concerns the evolving concepts in rural library services which encompasses digital and entrepreneurship activities and also community-driven programmes (Samsuddin et al., 2021; Saleng, 2023). Furthermore, Manjula & Naik (2022) and Samsuddin et al. (2020) highlighted aspect of collection development and IT integration. In Malaysian context although there is an adoption of digital practice, Samsuddin et al. (2021) found that they are not comprehensively widespread. Meanwhile capabilities to deliver insightful digital services and resources contribute to rural development initiatives by the government. Finally, the third problem statement is based on the limited evaluation of users' expectations and perceptions within the context of rural library rebranding along with community development. In relation, previous study emphasised the need to analyse rural library services and community needs

(Samsuddin et al., 2020; Mia, 2020). The integration of rebranding factors and service quality is closely linked and provide related perspectives for understanding how users perceived. This is supported by Natalia & Eddiansyah (2020) and Hommerová et al. (2020) who mention that without transformation in library service quality, the outcome of rural library rebranding initiatives will be affected as service quality has a significant influence. Considering all the issues and barriers mentioned under the problem statement, this study is significant in exploring the three main constructs related within the Malaysian rural library context. Considering these main issues, it is important to develop an appropriate measurement instrument to examine rebranding factors, service quality and community development within the Malaysian rebranded rural library context. This is particularly relevant as rebranding initiatives have already been introduced in Malaysia, but their implementation across the nation remains limited in scale. Therefore, a reliable measurement instrument is necessary to appropriately assess users' expectations and perceptions within the context of this present study.

RESEARCH OBJECTIVES

Subsequent to the content validity assessment using the Content Validity Index (CVI), this pilot test aims to evaluate the internal reliability of the instruments developed by using Cronbach's Alpha prior to the main study.

LITERATURE REVIEW

As an overview, previous studies on rural libraries context have mainly focused in term of transformation of services, digital approach and community engagement, which largely concentrating on library operations, services and emerging trends. Considering the aims of this study, the literature review concentrating on rural library rebranding, specifically evaluating rebranding factors, service quality, and community development which directly informed the development of the research constructs, key dimensions and measurement items used in the pilot study.

Rural Library Rebranding

Rural libraries as service providers need to align their roles accordingly with users' needs, and in relation to this, rebranding has become increasingly important as libraries evolve beyond conventional ones into dynamic community spaces. A previous study by Hommerová et al. (2020) highlighted library rebranding as a strategic process that encompasses service transformation, communication strategies, and user engagement. In relation to this matter, existing studies also connect with the adaptation to community needs by including digital literacy programmes, flexible learning spaces, and digital services (Strover et al., 2020; Sharma et al., 2021). Considering the limitation on empirical studies examining how users perceived rural library rebranding, the constructs and measurement items related to rural library rebranding were adopted and adapted from previous studies to suit the context and scope of study.

Library Service Quality

Generally, service quality is an important factor influencing users' perceptions of services being provided, either by commercial industries or service providers such as rural libraries. One important aspect identified by previous studies is that although rebranding may improve the image of the organisation; service quality may influence user satisfaction and engagement (Natalia & Erdiansyah, 2020; Hommerová et al., 2020). According to Zaheer et al. (2020) and Shah et al. (2021), users particularly have high expectations of the quality of services, staff professionalism, and diversity of information resources,

and this is interrelated with LibQUAL+ the widely used models in the library field for assessing users' expectations and perceptions towards library services, as mentioned by Ghaedi et al. (2020) and Das & Handique (2020). This study incorporated the dimensions of library service quality into the developed instruments to evaluate users' expectations and perceptions towards rebranded rural libraries.

Community Development

As an overview, community development demonstrates a comprehensive approach that involves the participation of the community, an asset focus, and multiple dimensions of community empowerment, such as social, economic, cultural, physical, and healthcare. Despite the comprehensive concept of community development, many rural communities face challenges in various socioeconomic aspects (DOSM, 2025; Leviäkangas et al., 2025; Serchen et al., 2025). As dynamic community information hubs, rural libraries may support community development by providing wide access to information resources and digital tools and empower the community through a variety of lifelong learning activities, including information and digital literacy. Previous studies highlighted that rural libraries contribute to community development through digital literacy programmes, information access, and community engagement initiatives (Oyelude, 2024). According to Palmer (2021) & Hider et al. (2024), strengthening the role of rural libraries in supporting inclusive community development relies on the transformation of physical and digital library spaces, together with continuous improvement of library services. Consequently, the contributions of rural libraries are consistent with findings by Prihatin et al. (2024) and Mia (2020) in relation to socioeconomic perspectives, where rural libraries may contribute to community development by fostering social inclusion, access to information and knowledge, and supporting socioeconomic empowerment among rural communities. Therefore, community development constructs were incorporated into this study to evaluate the perceived impact and outcomes in relation to rural library rebranding initiatives. This construct was adapted from the community development perspectives by Philips & Pittman (2020), which provides insightful basis for understanding the community well-being within a specific area or region.

Underpinning Theories and Models

This study is underpinned by theories and models of rebranding, library service quality, and community development, which integrate rebranding framework discussed by Zhang (2021), LibQUAL+ framework (Cook et al., 2000), and the Community Development framework discussed by Phillips and Pittman (2020). The Rebranding Factors construct that was adopted from the Zhang rebranding framework includes dimension of External Environment and Competitive Position dimensions, with the additional dimension of a Digital transformation proposed by the researcher. The additional factor, Digital Transformation which was proposed by the researcher, reflects the digital-age transformation that shows the growing importance of digital technologies and ICT in rural library sustainability (Romansky & Noninska, 2020; Priyadarshani, 2023). Whereas, the integration of LibQUAL+ in this study highlights three dimensions, including Affect of Service, Information Control, and Library as Place. In relation, the Community Development construct was contextualised through the dimensions of Economic Empowerment, Education and Knowledge Empowerment, and Social Well-being. Based on the integration of these conceptual foundations, the Rebranding Factors construct including their respective dimensions offers insight for comprehending rebranding factors, LibQUAL+ is used to assess how users perceive service quality in rural libraries, and the Community Development Model offers the conceptualisation of community development outcomes in the context of rural library services. Based on the integration of these conceptual foundations, has contributed to the development of the three key constructs including their respective dimensions and measurement instruments used in this current study. . The content validity (CVI)

of the measurement instrument was established through expert evaluation prior to pilot testing to ensure all the items were relevant, valid, and suitable for measuring the three key intended constructs.

Conceptual Framework

The development of a conceptual framework for this study was based on a comprehensive literature review. Accordingly, building upon the underpinning theories and models discussed in the previous section, the conceptual framework integrates three key constructs namely Rebranding Factors, Service Quality, and Community Development which also considered represents the broader conceptual structure of the study. The development of measurement items for each construct also organise according to the basis structure of this conceptual framework, which were reviewed and validated by experts prior to the pilot test. This pilot study focuses on assessing the internal consistency and reliability of the measurement instrument developed based on the dedicated constructs and dimensions and does not empirically test these relationships. The proposed conceptual framework is illustrated in Figure 1.

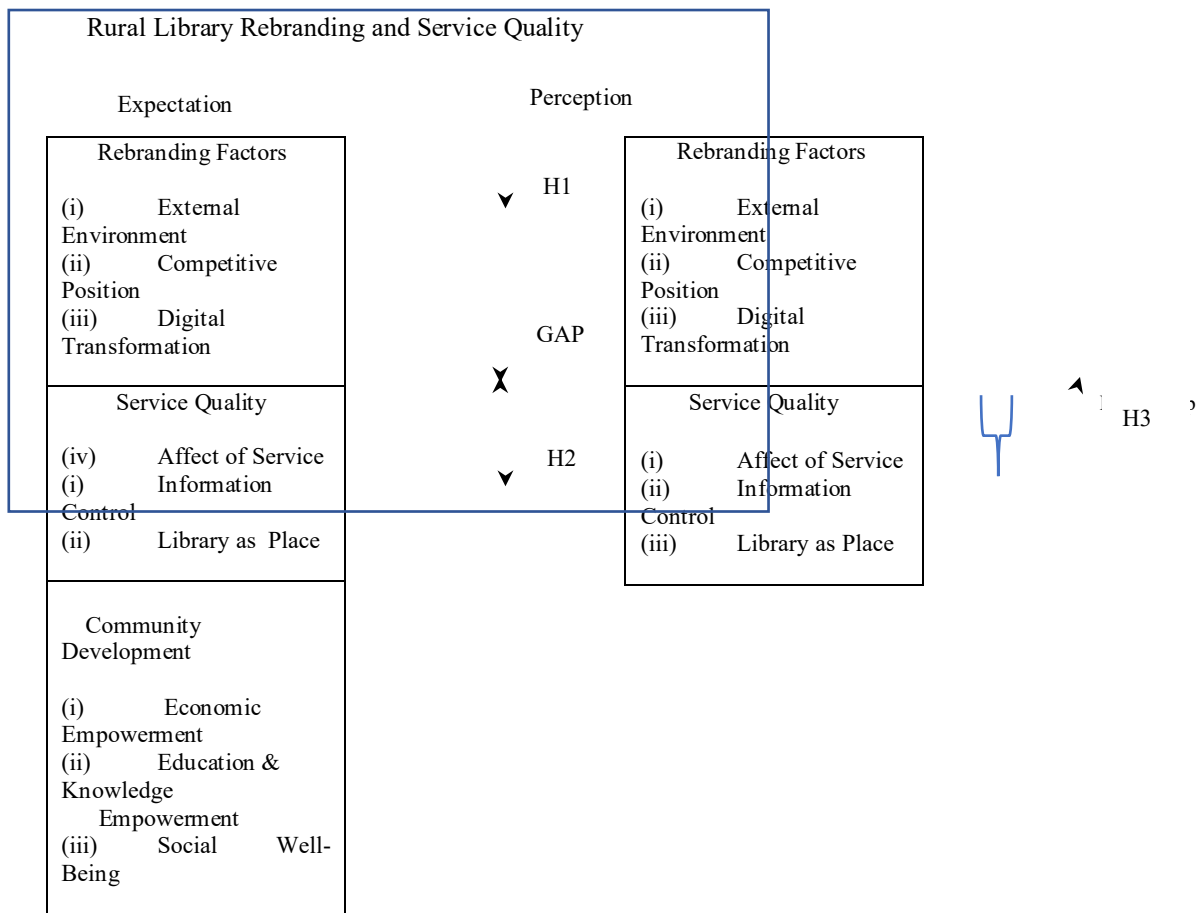


Fig. 1. Conceptual Framework of the Study

METHODOLOGY

Pilot Test Data Collection

This study employed a quantitative survey design using a structured questionnaire to collect data. A total of 38 respondents were involved in the pilot test. The respondents consisted of male and female rebranded rural library users aged 18 years and above across different sociodemographic backgrounds and visit frequencies. The pilot test was conducted within two weeks at one selected rebranded rural library as the research site. This pilot site reflected the characteristics of the rebranded rural libraries targeted in the main study but was not included as one of the main study sites. The instrument comprised three constructs namely Rebranding Factors, Service Quality, and Community Development. Rebranding Factors and Service Quality constructs were further measured using two parallel subscales, namely expectations and perceptions. The Rebranding Factors and Service Quality constructs based on the parallel expectation and perception subscales, resulting in 28 and 32 measurement items, respectively. Whereas, Community Development comprised 18 measurement items. Overall, the instrument consisted of 78 measurement items, providing a structured basis for assessing the internal consistency reliability of the instrument.

Table 1: List of items developed

Construct	Dimension	Measurement Items
Community Development	Economic Empowerment	1. I have the opportunity to generate income within my community. 2. I have access to resources for entrepreneurship training. 3. I have access to resources for financial skills training 4. I have the opportunity to participate in digital-based economic activities within my community. 5. I have skills that can help improve my job opportunities. 6. I receive guidance to improve my economy. 7. I feel confident to participate in economic activities in my community.
	Education & Knowledge Empowerment	1. I have the opportunities to learn new knowledge in my community. 2. I have access to learning resources in my community. 3. I have the opportunity to develop new skills, including digital skills, within my community. 4. I receive guidance to improve knowledge and skills within my community. 5. I feel confident making decisions with the knowledge and skills that I have. 6. I use the knowledge and skills I have to contribute to community development.

	Social Well-Being	1. I feel a strong sense of belonging in my community. 2. People in my community support each other. 3. I participate in various community activities. 4. My community respects religious differences. 5. My community respects cultural differences
Rebranding Factors	External Environment	1. Takes into account trends. 2. Takes into account service improvements during crises (e.g., Covid, floods). 3. Aligned with rural socioeconomic changes. 4. Aligned with rural development policies.
	Competitive Position	1. Has a unique identity that distinguishes it from other information providers. 2. Provides better library services. 3. High level of competitiveness to remain relevant. 4. Successfully enhances stakeholder confidence. (e.g., user/community/school/NGOs) 5. Successfully makes the library more attractive to the community.
	Digital Transformation	1. AI developments to benefit the community. 2. Adopts digital technologies to enhance service delivery. 3. Provides digital-based programs. 4. Provides ICT space for digital and creative activities. 5. Staff are competent in guiding users to use ICT and digital facilities.
Library Service Quality	Affect of Service	1. Highly understanding when assisting users who require help. 2. Highly confident when assisting users who require help. 3. Give users individual attention when needed. 4. Consistently respectful when providing services. 5. Always responsive whenever needed. 6. Knowledgeable enough to answer user questions.
	Information Control	1. Digital resources are easily accessible inside and outside this rural library. 2. Online medium is regularly updated. (e.g., social media/websites)

	3.	Online medium is easy to use. (e.g., social media/websites)
	4	Printed and digital reference resources provided are sufficient and relevant.
	5.	Digital facilities are easy for users to access and use.
Library as Place	1.	This rural library modern space is comfortable.
	2.	This rural library space is suitable for individual study.
	3.	This rural library space is suitable for group activities.
	4.	This rural library is overall visitor-friendly.
	5.	This rural library serves as an important community hub.

Pilot Testing Overview

Following the process of refinement and finalisation of the questionnaire based on the experts' validation, the instrument was converted into Google Forms format for conducting the pilot test. The purpose of the pilot test is as a preliminary phase to evaluate the reliability and practical suitability prior to the main data collection. A previous study by Haji-Othman et al. (2021) highlighted that conducting pilot testing after expert panel feedback is to measure internal consistency, face validity, content validity, and test-retest reliability. Wadood et al. (2021) further agreed that this preliminary testing increases the reliability, validity, and practicability of instruments. Thus, pilot testing contributes as an important preliminary assessment before the instrument of this study is administered to a larger sample of real study. In terms of the sample size of respondents involved in this pilot study, there are no specific standards of recommended numbers or universal standards. According to Laws et al. (2022) and Bujang et al. (2024), pilot studies vary in size, with small samples used more for explanatory purposes. Kunselman (2024) further highlighted that the sample size should be measured on the intended purpose of the pilot test rather than a specific rule of numerical criteria. In relation, the findings of this pilot study provide as preliminary evidence of internal consistency reliability which support further evaluation in the main study.

Pilot Test Procedure

Prior to the pilot test, the researcher directly engaged with the intended head of division and the rural library staff in order to seek permission and cooperation to run the pilot. A face-to-face visit session was conducted to explain the purpose of the study, the data collection procedures, and the planned schedule for the pilot test. This approach and initial engagement is crucial in ensuring clarity, cooperation, communication, and smooth execution of the pilot study. Following this process, a pilot study was conducted via Google Form, and overall, 38 respondents participated within the scheduled time frame. To facilitate respondent participation, the questionnaire was disseminated using a digital poster shared via WhatsApp, which included a URL link and a QR code linking directly to the online survey. This method enabled more convenient access for potential respondents. Prior to this pilot test participation, informed consent was obtained from respondents through the Google Form.

FINDINGS AND DISCUSSIONS

The findings of the pilot test survey instrument were measured using the Statistical Package for the Social Sciences (SPSS) to assess the internal consistency reliability of the developed instrument. For statistical measurement, Cronbach's Alpha is one of the most widely used for assessing the reliability of research instruments particularly to evaluate the extent to which items within a scale consistently measure

the same underlying construct. A previous study by Saw et al. (2025) mentioned that the internal consistency was measured using Cronbach's Alpha and interpreted as excellent (> 0.9), good (> 0.8), acceptable (> 0.7), questionable (> 0.6), poor (> 0.5), and unacceptable (< 0.5). Furthermore, Varathan et al. (2023) adopted similar terminology in an exercise protocol satisfaction questionnaire, stating that the Cronbach's Alpha value of 0.907 signified a high level of reliability for the questions or items featured in the questionnaire. Based on this pilot data, the internal consistency reliability of all constructs and dimensions was assessed using Cronbach's Alpha. The results are shown in the following tables.

Table 2: Overall reliability of pilot study constructs

Construct	No. of Items	Cronbach's Alpha	Interpretation
Community Development (CD)	18	.904	Excellent
Service Quality (SQ)	32	.937	Excellent
Rebranding Factor (RF)	28	.970	Excellent
Overall Instrument	78	.970	Excellent

Based on the overall results shown above, it shows excellent internal consistency for all constructs with indicates Cronbach's Alpha values range .904 to .970. Accordingly, Community Development construct recorded a Cronbach's Alpha coefficient of .904, followed by Service Quality .937 and Rebranding Factors .970. The values exceeded the minimum acceptable value of .70. Overall, the instruments, consisting of 78 measurement items, also recorded excellent internal consistency ($\alpha = .970$), provide a general assessment of internal consistency reliability.

Table 3: Reliability of expectation and perception subscales

Construct	Subscales	No.of Items	Cronbach's Alpha
Rebranding Factors (RF)	Expectation	14	.941
	Perception	14	.947
Service Quality (SQ)	Expectation	16	.944
	Perception	16	.821

Based on the conceptual framework of this study, separate reliability analyses were conducted for expectations and perceptions prior to gap analysis. The expectation items assess respondents' anticipations or beliefs towards standards and desired levels of service prior to actual use, whereas the perception items capture respondents' actual experiences and evaluations after using the services. This approach is a well-established service quality measurement framework, which allows meaningful comparison between expected and perceived service performance. Dsilva et al. (2021), similarly mentioned that recent studies have continued to apply identical or closely worded items in measuring expectation–perception gaps, further supporting this methodological approach. Thus, the results measured in the table for Rebranding Factors expectation ($\alpha = .941$) and perception ($\alpha = .947$) indicate excellent internal consistency. In relation, the results measured in the table for Service Quality expectation ($\alpha = .944$) and perception ($\alpha = .821$) indicate excellent and good internal consistency. Overall the good to excellent reliability values obtained in this study reflect strong internal consistency for both expectation and perception subscales.

Table 4: Reliability of instrument measures by dimension and subscale

Independent Variable (IV)				
Construct	Dimension	No. of Items	Expectation (Cronbach's Alpha)	Perception (Cronbach's Alpha)
Rebranding Factors	External Environment	4	.897	.856
	Competitive Position	5	.900	.865
	Digital Transformation	5	.923	.943
Service Quality	Affect of Service	6	.960	-.319
	Information Control	5	.884	.904
	Library as Place	5	.873	.820
Dependent Variable (DV)				
Construct	Dimension	No. of Items	(Cronbach's Alpha)	
Community Development	Economic	7	.817	
	Empowerment			
	Education and Knowledge Empowerment	6	.870	
	Social Well-Being	5	.859	

As presented in table 4, 88.9% or eight of the nine dimensions demonstrated good to excellent internal consistency ranging from ($\alpha = .817$) to ($\alpha = .960$). Only one dimension under the perception subscale of Affect of Service, recorded negative internal consistency ($\alpha = -.319$) demonstrating inconsistency across the items within the dimension. Therefore, further item-level diagnostic analysis was conducted to identify the items of the inconsistency.

Table 5: Item-level diagnostic analysis of Affect of Service (Perception)

Construct	Dimension	Items	Corrected Item-Total Correlation.	Cronbach's Alpha if Item Deleted
Service Quality	Affect of Service	AS1: Highly understanding when assisting users who require help.	.812	NA
		AS2: Highly confident when assisting users who require help.	-.808	.956
		AS3: Give users individual attention when needed.	.591	NA
		AS4: Consistently respectful when providing services.	.640	NA
		AS5: Always responsive whenever needed.	.640	NA
		AS6: Knowledgeable enough to answer user questions.	.428	NA

Table 5 shown the item-level diagnostic analysis of Affect of Service perception subscale and item AS2 has been identified as the main problematic item, with a negative corrected item–total correlation ($-.808$), while the remaining five items demonstrated positive corrected item–total correlations ranging

from .428 to .812. Diagnostic exclusion of AS2 indicated the Cronbach's Alpha coefficient increased from -.319 to .956, indicating strong internal consistency among the remaining items. This confirmed that the negative Cronbach's Alpha reflected the actual responses. The AS2 was not removed and its wording was refined for clarity prior to the main data collection.

CONCLUSION

Overall, this study demonstrates internal consistency and acceptable levels of reliability for three main constructs, namely Rebranding Factors, Service Quality, and Community Development. The negative Cronbach's Alpha recorded for the Affect of Service perception dimension identified that AS2 as contributing to the inconsistency. Therefore, its wording was subsequently reviewed and refined for clarity prior to the main data collection. The findings overall provide preliminary evidence of internal consistency reliability. The relatively small pilot sample of 38 respondents from a single rural library also limits the generalisability of the findings. In terms of limitation and future research, this study lies on a specific sample of users within the selected research site which may limit the generalisability of the findings. Future research is suggested to expand to a broader sample of populations to enhance a more comprehensive assessment of the survey's reliability across various contexts.

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CONFLICT OF INTEREST STATEMENT

The authors declare there no conflict of interest. The research was conducted in the absence of any self-benefits, commercial and financial conflicts.

AUTHORS' CONTRIBUTIONS

Anis Mat Saad carried out the research, collected and analysed the data, wrote and revised the manuscript. Shamila Mohamed Shuhidan supervised the research, provided overall guidance on the research scope, design, methodology, and reviewed and revised the manuscript. Husain Hashim provided guidance on the research methodology and reviewed and revised the manuscript. All authors reviewed and approved the final article submission.

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