

USAGE OF WHATSAPP APPLICATION AS A SOCIAL MEDIA PLATFORM IN SABAH STATE LIBRARY

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Abstract: In today's digital age, social media has become an integral part of our lives. People now use technology, including social media platforms, to communicate with one another. It has become a widely used medium for interaction and communication through internet-based applications. Additionally, social media has become both a communication and promotional tool for public libraries today. This study aims to investigate and assess users' satisfaction with the use of WhatsApp application in Sabah State Library. To achieve this goal, the paper seeks to evaluate the current trends in WhatsApp application usage within the library sector as part of an effort to gauge user satisfaction.

Keywords: Social Media, WhatsApp, Library, Digital Literacy, Media Literacy

INTRODUCTION

Social media refers to platforms featuring user-generated content, such as Facebook, Twitter, YouTube, Instagram and WhatsApp. These platforms provide various features that promote social interaction, enabling users to share thoughts publicly, express emotions through photos, music, and videos, as well as exchange private messages. Over 4.88 billion social media users worldwide as of 2023, which represents about 60% of the global population (DataReportal, 2023). Social media adoption has grown by over 90% in the last decade, with platforms like Facebook, Instagram, TikTok, and WhatsApp leading the charge. For example, in 2022, global data showed that platforms like Facebook, Instagram, TikTok, and WhatsApp have seen significant user base expansions, contributing to the massive growth of social media usage. Platforms like TikTok have shown a growth in ad reach by over 12.6% within just one year, and WhatsApp remains the most popular social media app globally. The rapid increase in daily time spent on social media has also been reported, with the average global user now spending about 7 hours per day online (Kemp, 2022).

Social media refers to digital platforms and technologies that facilitate the creation, sharing, and exchange of user-generated content and interactions among individuals or groups. These platforms enable users to connect, communicate, and collaborate in virtual environments, often through text, images, videos, and other multimedia formats (Smith, 2023). Kaplan and Haenlein (2010) define social media as a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content. In other hand, according to Boyd and Ellison (2007) Social media are web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. Besides, Zarella (2009) define social media as online platforms that enable people to share content, including text, images, and videos, and to interact with others in a digital environment.

The library, as a non-profit organization, is seizing the opportunity to leverage social media as a tool for information dissemination and service promotion. However, the question remains: Can these platforms meet users' expectations? Additionally, can information shared online effectively reach its intended audience? Given the current challenges associated with social media, the researcher aims to explore and assess users' satisfaction with library social

media platforms. The study will culminate in the development of a framework focused on enhancing Sabah State Library services through WhatsApp applications based on user satisfaction.

Purpose of Study

This study aims to investigate and assess users' satisfaction with the use of WhatsApp application in Sabah State Library. WhatsApp is a social media platform that provides communication tools and reference services for public libraries. However, can this platform cater the needs of public libraries users? How is this platform perceived by the public library's users? What is the users' expectation towards the public library WhatsApp service? With those questions, the researcher conducts this study and focuses on the users.

Research Objectives

This study has four (4) research objectives: to investigate and examine the users' satisfaction with library the library WhatsApp service.

1. To investigate the factors that influence user satisfaction with Sabah State Library WhatsApp service.
2. To determine the level of factors that influence user satisfaction towards Sabah State Library WhatsApp service users.
3. To examine the relationship between the independent variables (perceived usefulness, perceived ease of use, facilitating conditions and behavioural intention) and user satisfaction of Sabah State Library WhatsApp service users.
4. To examine how digital literacy mediates independent variables (perceived usefulness, perceived ease of use, facilitating conditions and behavioural intention) with user satisfaction of Sabah State Library WhatsApp service users.

Research Questions

1. What are the factors that influence user satisfaction among Sabah State Library WhatsApp service users?
2. What is the level of factors that influence user satisfaction among Sabah State Library WhatsApp service users?
3. How are the relationships between independent variables (perceived usefulness, perceived ease of use, facilitating conditions and behavioural intention) with user satisfaction of Sabah State Library WhatsApp service users?
4. How does digital literacy mediate independent variables (perceived usefulness, perceived ease of use, facilitating conditions and behavioural intention) with the user satisfaction of Sabah State Library WhatsApp service users?

LITERATURE REVIEW

WhatsApp application has been a phenomenon in year 2010 and it achieved a record as a primary communication platform in Malaysia (Encyclopaedia Britannica, 2026). WhatsApp usage increased tremendously until today across different age groups and sectors including government, educational, business and local communities. There are several researchers have

previously conducted studies on social media. For example, Pereira, A., & Ribeiro, M. (2020) explores how academic libraries use WhatsApp for communication and information dissemination. It discusses the benefits and challenges of implementing WhatsApp as a library service tool. Findings in their study proved that WhatsApp improves communication between library staff and users by providing a direct and immediate channel; the app facilitates quick dissemination of information, such as library updates, event announcements, and research assistance; it helps in engaging users more effectively through group chats and personalized messages, fostering a stronger connection with the library community. Besides, there is a case study investigates the application of WhatsApp in providing library services, focusing on user engagement and service effectiveness in a public library setting. The study concludes that WhatsApp can be a valuable tool for enhancing library services and user engagement, but it also highlights the need for careful management to address the associated challenges (Hammond & Williams, 2019). In other hand, there is a survey examines the adoption and use of WhatsApp in Indian academic libraries, analyzing its impact on library services and user satisfaction. In conclusion, Kumar and Kumar (2018) found that WhatsApp can positively impact library services and user satisfaction in Indian academic libraries, but it also requires careful consideration of resource allocation, staff training, and privacy issues. Additionally, Wang and Wang (2017) found that WhatsApp plays a significant role in enhancing library outreach and user engagement, offering practical benefits for communication and participation, while also highlighting the importance of managing user feedback and improving service practices.

Privacy Issues in Social Media

Tufekci, Z. (2014) explores the implications of big data and surveillance in the context of social media, focusing on how privacy concerns are impacted by computational social science techniques. The researcher underscores the profound implications of big data and computational social science on privacy and surveillance, advocating for greater transparency, regulation, and ethical considerations in the handling of personal data. Marwick and Boyd (2014) illustrate that teenagers employ complex and context-sensitive strategies to manage privacy on social media, influenced by social norms, platform designs, and their evolving understanding of privacy and data use. In the other hand, Solove (2021) underscores the pressing privacy challenges posed by digital technologies and social media, advocating for comprehensive legal reforms and ethical practices to safeguard individuals' privacy in the information age. Moreover, Zuboff (2019) provides a critical analysis of surveillance capitalism, detailing its impact on privacy, power dynamics, and individual autonomy, and advocates for comprehensive regulatory and societal responses to address these issues. Nissenbaum (2010) highlights the concept of contextual integrity as crucial for understanding and protecting privacy in the digital age. She advocates for privacy policies and technologies that respect and uphold contextual norms to address the challenges posed by evolving technologies and social media. The Technology Acceptance Model (TAM) explains users' behaviour toward accepting the technology, as shown in Figure 1 below. When the user's acceptance of the technology is low, it will influence their social media usage and indirectly affect user satisfaction. This was agreed by Lane and Coleman (2012), which confirmed the existence of a strong relationship between TAM and social media. (Lane & Coleman, 2012).

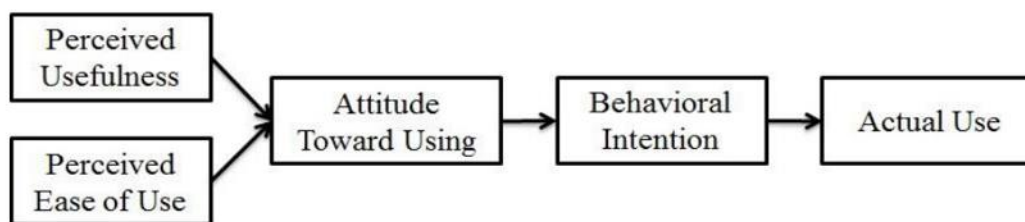


Figure 1: Technology Acceptance Model (Davis, 1989)

Digital Literacy Skills in Social Media

Hobbs, R. (2010) emphasizes the critical need for integrating digital and media literacy into education to prepare students for effective and responsible engagement with digital and social media. The study report provides actionable strategies for curriculum development, teacher training, and policy support to achieve these goals. Similarly, Livingstone (2014) reveals that while there are high expectations for children to use the internet effectively, there are significant challenges and gaps in their digital literacy skills. The book advocates for improved education, parental involvement, and policy support to better equip children for safe and responsible internet use. In addition, Mihailidis and Cohen (2013) argue that media literacy is essential for developing critical thinking and responsible behavior in the era of social media. They recommend integrating media literacy into education and providing professional development for educators to address the challenges and opportunities presented by new media. Furthermore, Bawden (2008) provides a comprehensive overview of the concept of digital literacy, emphasizing its evolving nature and the skills required to effectively engage with digital and social media. The study advocates for integrating digital literacy into education and policy to address the challenges and ensure individuals are equipped to navigate the digital landscape. Besides, Buckingham (2013) underscores the vital role of media education in developing critical digital literacy skills, particularly in the context of social media. Similarly, the study also calls for the integration of media literacy into educational curricula to prepare students for the challenges of engaging with contemporary media culture. Turan et al. (2015) proposed a theoretical framework based on the Technology Acceptance Model, Theory of Reasoned Action, Theory of Planned Behaviour, and Diffusion of Innovation Theory to illustrate the relationship between user satisfaction and user involvement. Their theory explained the integration of technology and personal issues that influence attitudes towards using, which then measured user satisfaction. (Turan et al., 2015).

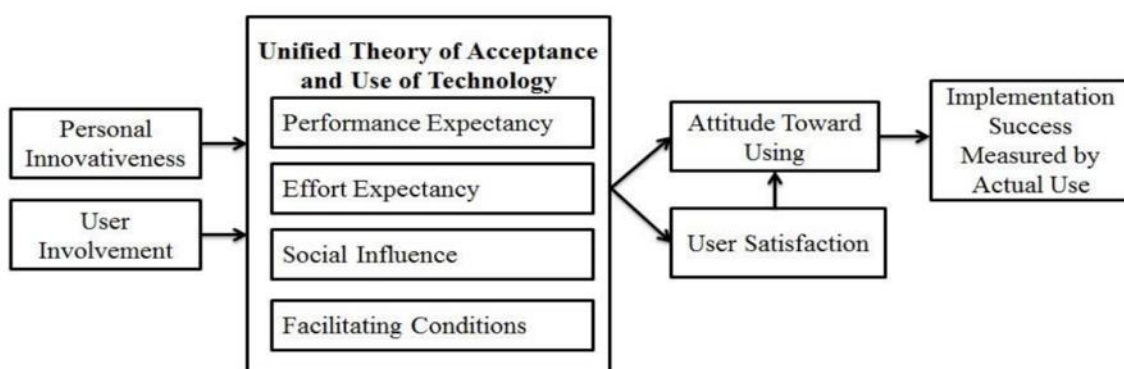


Figure 2: Unified Theory of Acceptance and Use of Technology (Davis, 1989)

Both the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) propose that the effort needed to use technology and the expected outcomes significantly influence an individual's behavioral intention toward a system (Figl & Derntl, 2011; Venkatesh et al., 2003). Given that TAM provides a more comprehensive perspective on the ease-of-use belief as a predictor of perceived usefulness (PU) and attitude—both of which ultimately shape behavioral intention and actual adoption—TAM serves as the foundational framework for developing the theoretical model in this study.

Inactive Library's Social Media Sites

Aharony, N. (2012) explores how academic libraries use Facebook, highlighting issues with inactive pages and underutilized platforms due to a lack of engagement and strategy. Aharony's study highlights the need for libraries to develop a more strategic and resource-supported approach to social media in order to maximize its potential for user engagement. Research underscores the importance of consistent activity and engagement on social media platforms to enhance user interaction and ensure libraries maximize their online presence (Shulman, 2011). Mon's (2014) study revealed that poor content management is a primary reason for the inactivity or underutilization of social media platforms in academic libraries. Libraries often struggle to create relevant, engaging content that appeals to their audience. Without a clear plan, libraries fail to engage users effectively and maintain an active online presence. Mon's study highlights that successful social media use in academic libraries depends on effective content management and a strategic approach to engaging users, both of which are often lacking in many institutions. In other hand, Al-Daihani, S. M. (2016) investigates Twitter usage in libraries and addresses why some libraries have inactive accounts, often due to limited staff involvement and unclear goals for social media engagement. The research highlights the importance of having a clear social media strategy and dedicated resources to maintain active and engaging Twitter accounts in both public and academic libraries. Similarly, Ayre's study emphasizes the importance of planning, engagement, training, and resources for libraries to succeed on social media platforms. Without these elements, social media accounts are likely to become inactive or fail to achieve meaningful outcomes (Ayre, 2013). The issue is better explained with the conceptual model in research done to understand the continuance intention of social media behaviour (Assensoh-Kodua, 2019). This concept of a social media continuance intention model (SoMCIM) shown in Figure 8 is compatible with the topic, which implies that inactive library social media sites can impact social media continuance intention and finally affect users' satisfaction when the users positively or negatively moderate the impact.

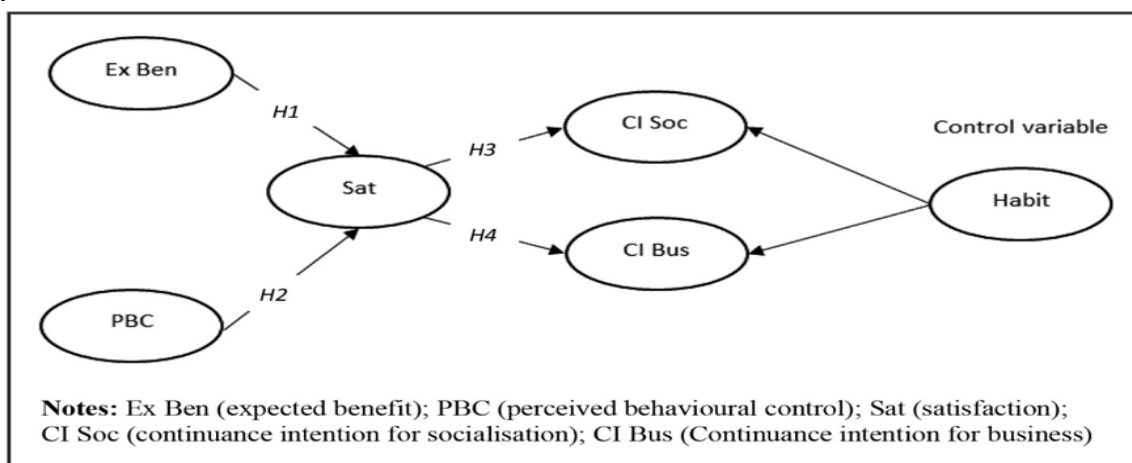


Figure 3: Social Media Continuance Intention Model (SoMCIM)

Proposed Framework

This research aims to investigate users' satisfaction with library social media sites (WhatsApp service). The measuring point is figuring out the variables affecting inactive library social media sites, which leads to exploring why they impact users' satisfaction positively or negatively. Based on the previous discussion, a proposed theoretical framework is shown in Figure 4.

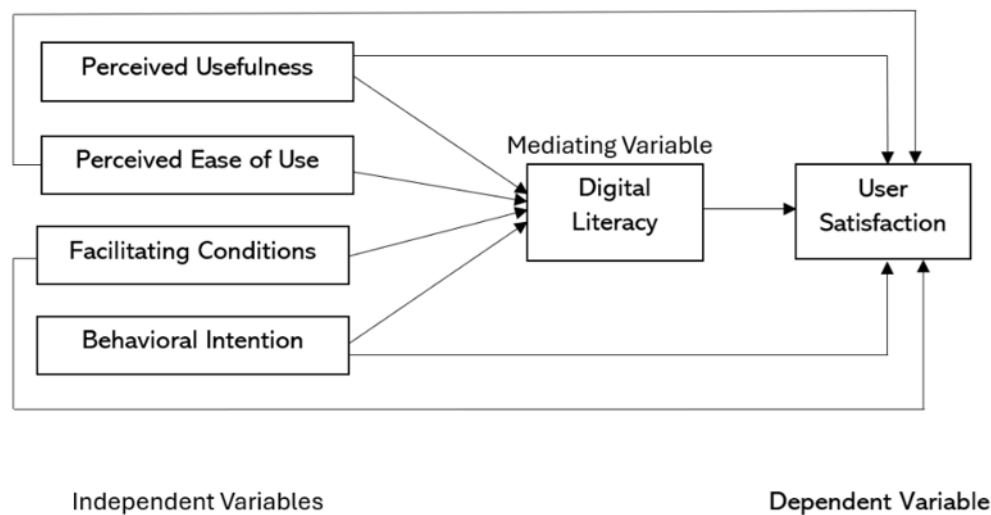


Figure 4: Proposed Theoretical Framework

METHODOLOGY

The target population in the study comprised of the professional librarians and the social media users of the Sabah State Library. Data collection methods based on questionnaires, interviews and observations. Using SPSS as the analysis tools and Roasoft Calculator to identify the sample size.

Research Design

Briefly, a research design is the action plan the researcher must follow to conduct the research. According to Creswell (2018), the research paradigm, methodologies, and methods are the three main mechanisms that play an important role in completing any research. Data must be gathered and analysed after identifying variables and constructing the research framework to achieve a conclusive solution to the research questions (Sekaran & Bougie, 2016). The research design in this study is shown in Figure 1 below.

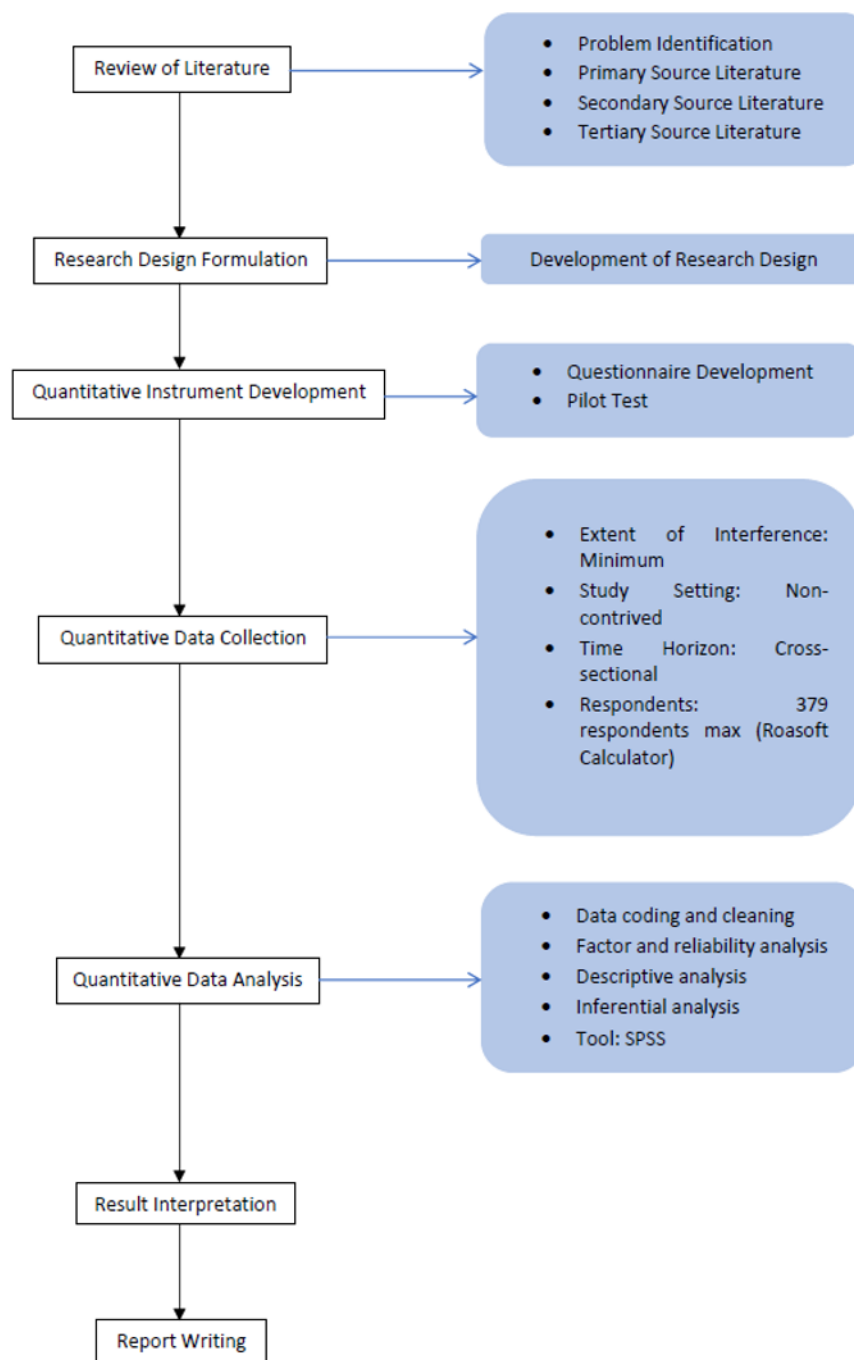


Figure 1

Population and Sampling of the Study

In this study, the researcher focuses on the WhatsApp service user at Sabah State Library, Headquarters as other branches have not actively used the platform in their services. Figure 2

below shows the Sabah State Library statistic on the WhatsApp reference service record for year 2025.

KUMULATIF STATISTIK PERTANYAAN RUJUKAN MELALUI WHATSAPP 2025

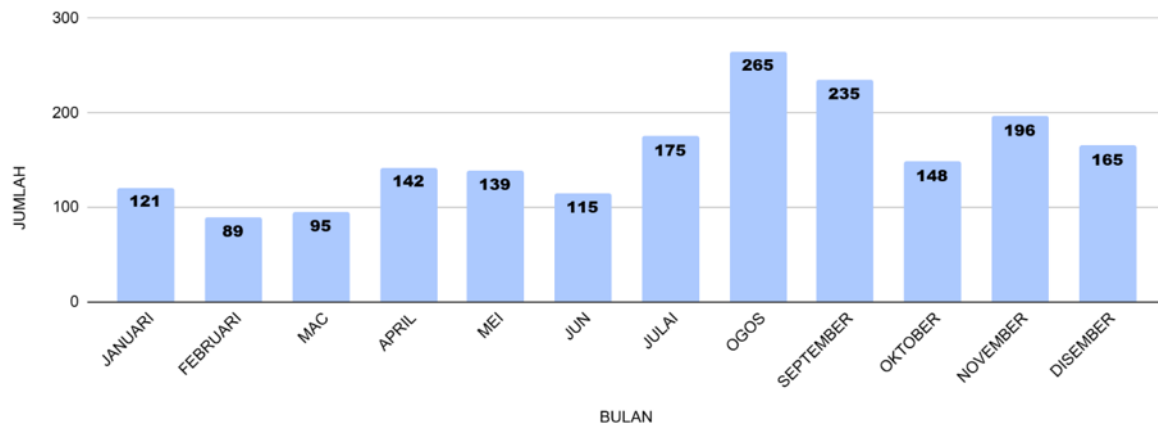


Figure 2

Based on the statistic, total users for year 2025 is 1,885 and this study is using this number as the population to calculate sample size. Therefore, a three-hundred twenty sample size (320) is required. The sample size was calculated using the Raosoft sample size calculator with a 5% precision rate, 95% confidence level, and 50% distribution response. The sample size calculator is shown in Plate 1 below.

Population Size

1885

Margin of Error (%)

5

Confidence Level

95%

Response Distribution (%)

50

Results (Forward)

Required Sample Size (infinite population): 385

Adjusted Sample Size (finite population): 320

Multi-Confidence Table

Based on your Margin of Error and Response Distribution.

Confidence Level	Z-score	Sample Size (∞ population)	Sample Size (finite pop)
80%	1.2816	165	152
85%	1.4395	208	187
90%	1.6449	271	237
95%	1.9600	385	320
99%	2.5758	664	491

Plate 1

Data Analysis

The quantitative approach was used in this study. The statistical analyses include descriptive statistics, independent-sample t-test, reliability analysis, confirmatory factor analysis, common method bias analysis, Pearson's coefficient correlation, and multiple regression analysis. Based on the findings discussed, this research outcome supports all the hypotheses proposed during the earlier stages of this research. The six hypotheses were tested, and positive outcomes were proven, with four independent variables that have significant relationships with user satisfaction. All the independent variables were significantly mediated by digital literacy to user satisfaction. The data analysis is outlined as follows:

Response Rate

Four hundred (400) sets of questionnaires were distributed among the respondents, all WhatsApp service users in Sabah State Library, Headquarters. Data were entered with a return rate of 96.3% (385 of responded questionnaires were returned out of 400). The data was screened to ensure no errors in data entry by detecting any 'out of range values' using the 'Descriptive' and 'Frequencies' commands. All the responses are completed without any missing values. There is a consensus that a response rate of 70% and above is necessary to ensure that the obtained sample is sufficiently representative of the target population from which its member is drawn (Patel et al., 2003).

Table 1: Response Rate

Type of Distribution Method	Total Distributed		Total Returned		Total Usable	
	No.	%	No.	%	No.	%
Sabah State Library WhatsApp	200	50	185	46.3	185	46.3
Physical in Sabah State Library	200	50	200	50	200	50
Total	400	100	385	96.3	386	96.3

As exhibited in Table 1, the highest rate was from the physically distributed in Sabah State Library (n=200) or 50%, distributed via Sabah State Library, Headquarters WhatsApp service (n=185) or 46.3%, similar to the usable responses. Altogether, there were 385 usable questionnaires, yielding 96.5% of the total questionnaires being distributed. Thus, the rate exceeds the required sample size of 320, as Barlett et al. (2001) recommended. All questionnaires were returned on schedule or within six weeks.

Reliability of Variables

The researcher computes the Cronbach's alpha for each component. As shown in Table 2, the values of Cronbach's alpha are higher than 0.7 for all items. It is important to note that all reliability measures have exceeded the minimum value of 0.7, as Nunally (1978) recommended. DeVellis discusses the importance of reliability in scale development and suggests that a Cronbach's alpha of 0.7 is a widely accepted minimum standard for reliability (DeVellis, 2016). George and Mallery provide a rule of thumb for interpreting Cronbach's alpha values: > 0.9 – Excellent, > 0.8 – Good, > 0.7 – Acceptable, > 0.6 – Questionable, > 0.5 – Poor, and < 0.5 – Unacceptable (George & Mallery, 2016).

Table 2: Summary of Reliability Statistics

Variables	Number of items in a component	Cronbach's Alpha
Digital Literacy	3	0.712
Perceived Usefulness	6	0.769
Perceived Ease of Use	6	0.786
Facilitating Condition	4	0.750
Behavioural Intention	3	0.800
User Satisfaction	3	0.837

Descriptive Analysis for Each Variable

Table 3: Descriptive Statistics

	N	Range	Mean	Std. Deviation	Variance
ALL_DL	385	3.67	4.0147	.72812	.530
ALL_PU	385	4.00	4.0974	.65548	.430
ALL_PEU	385	3.67	4.0810	.65264	.426
ALL_FC	385	4.00	3.8409	.75982	.577
ALL_BI	385	4.00	3.8519	.70157	.492
ALL_US	385	4.00	3.6476	.84860	.720
Valid N (listwise)	385				

Table 3 displays the descriptive analysis for each variable. To rate the level of high and low, this study uses (Sözen & Güven, 2019) shown in Table 4.23, which proposed that on the Likert Scale, a value number from 1-2 ranged from 1.00 to 2.60 is considered as low; 2.61 to 3.40 which value number 3 is Medium; and more than 4 – 5 is high as the range scored 3.41 to 5.00. The scoring range is shown in Table 4.19 below. Similarly, Winarti et al. (2019) interpret Likert scale responses with a slightly different range, categorizing 1-1.80 as "Strongly Disagree," 1.81-2.60 as "Disagree," 2.61-3.40 as "Neutral," and 3.41-4.20 as "Agree," and 4.21-5.00 as "Strongly Agree". Therefore, based on that measurement, the level of digital literacy among users of Sabah State Library is considered high, as the mean is 4.0147. The scoring range is more than 4. Similarly, the perceived usefulness and perceived ease of use are also considered high, as the scoring range is 4.0974 and 4.0810. On the other hand, the facilitating condition factor gets a scoring range of 3.8409, which is still considered high because it is between 3.41 and 5.00. Hence, all other factors in this study also have a high scoring range between 3.41 to 5.00, with behavioural intention at a 3.8519 score and user satisfaction at 3.6476.

Correlation of Variables

Table 4: Correlation of Variables

		ALL_DL	ALL_PU	ALL_PEU	ALL_FC	ALL_BI	ALL_US
ALL_DL	Pearson Correlation	1	.647**	.353**	.431**	.419**	.325**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	385	385	385	385	385	385
ALL_PU	Pearson Correlation	.647**	1	.381**	.387**	.408**	.342**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	385	385	385	385	385	385
ALL_PEU	Pearson Correlation	.353**	.381**	1	.717**	.681**	.483**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	385	385	385	385	385	385
ALL_FC	Pearson Correlation	.431**	.387**	.717**	1	.765**	.736**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	385	385	385	385	385	385
ALL_BI	Pearson Correlation	.419**	.408**	.681**	.765**	1	.657**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	385	385	385	385	385	385
ALL_US	Pearson Correlation	.325**	.342**	.483**	.736**	.657**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	385	385	385	385	385	385

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4 shows the correlation between all the variables. The correlation after factor analysis was performed using the Pearson Correlation Coefficient. The result showed that the factors are correlated with weak to strong correlations. The results indicated that digital literacy and user satisfaction were weakly correlated with the correlation coefficient ($p < 0.00$, $r = 0.325$) as the range is between 0.20 – 0.39, which is considered a weak correlation (Evans, 1996), as shown in Table 4.25 below. Results also show that perceived usefulness was weakly correlated with user satisfaction with a correlation coefficient ($p < 0.00$, $r = 0.342$). Besides that, digital literacy and perceived ease of use also show a weak correlation with the correlation coefficient ($p < 0.00$, $r = 0.353$). Meanwhile, perceived usefulness and perceived ease of use reveal a weak correlation with the correlation coefficient ($p < 0.00$, $r = 0.381$). Similarly, facilitating conditions and perceived usefulness also shows a weak correlation with the correlation coefficient ($p < 0.00$, $r = 0.387$). On the other hand, all other factors show moderate to strong correlation, with the strongest correlation being the behavioural intention and facilitating condition with a correlation coefficient ($p < 0.00$, $r = 0.765$).

FINDINGS AND DISCUSSION

The findings of this study reveal that perceived usefulness, perceived ease of use, facilitating conditions, and behavioural intention significantly influence users' satisfaction toward the Sabah State Library WhatsApp service. Among these factors, facilitating conditions and

behavioural intention demonstrated the strongest relationship with user satisfaction, indicating that access to appropriate ICT infrastructure, internet connectivity, digital devices, support, and users' willingness to continue engaging with the platform are crucial determinants of satisfaction. Perceived ease of use showed a moderate relationship with satisfaction, suggesting that although users generally find WhatsApp is somehow manageable to use, satisfaction is also influenced by other factors such as content quality, engagement, and digital experience. Meanwhile, perceived usefulness recorded the weakest relationship with satisfaction, implying that users may view the library's WhatsApp service primarily as an informational or social platform rather than a tool that directly enhances productivity or work performance. The study also confirmed that digital literacy mediates the relationship between all independent variables and user satisfaction, demonstrating that digitally literate users are better able to navigate, engage with, and benefit from the library's social media services. Despite challenges related to the digital divide, geographical disparities, and inconsistent ICT infrastructure in Sabah, the findings indicate that the community remains highly motivated to improve digital literacy and adopt digital technologies. Furthermore, the study highlighted issues such as inactive library social media management, limited content engagement, and insufficient promotion of the WhatsApp service, which may affect users' perceptions and satisfaction. Overall, the study concludes that improving facilitating conditions, strengthening digital literacy, and maintaining active, user-centred social media engagement are essential strategies for enhancing user satisfaction with the library's WhatsApp services.

Research Contribution

This contribution focuses on theory development and the enhancement of existing theories through logical reasoning and supporting evidence. A theoretical framework is established to explain the underlying causes of the research problem. Understanding users' expectations is crucial for libraries to improve services and meet user satisfaction. As a user-centered study, this research will analyze expectations and perceptions from the users' viewpoint. The findings will assist the library in creating guidelines for effectively using social media platforms as tools for information dissemination.

Enhancement of Library Services

The study can provide insights into how WhatsApp can improve the delivery of library services, such as book reservations, event notifications, and information dissemination, making it easier for users to access library resources in a convenient and timely manner.

Improved User Engagement

By understanding the effectiveness of WhatsApp as a communication tool, the study can contribute to better user engagement strategies, helping the library connect more actively with its users through personalized and direct messaging.

Development of a Communication Framework

The research could lead to the development of a communication framework or best practices for libraries in using WhatsApp for outreach, providing guidelines for other libraries in Sabah and beyond on how to effectively integrate the platform into their communication strategy.

Addressing the Digital Divide

The study may contribute to addressing the digital divide by exploring how WhatsApp, as a widely used and accessible application, can bridge the gap between tech-savvy users and those with limited access to more sophisticated technology platforms.

Informing Policy and Management Decisions

The findings could guide library management and policymakers in making informed decisions about resource allocation, digital literacy training, and the adoption of social media tools to enhance library services.

Contributing to Social Media Research in Libraries

The research could add to the growing body of literature on social media usage in libraries, specifically focusing on WhatsApp, which is under-researched compared to other platforms like Facebook and Twitter.

User Satisfaction and Feedback Mechanism

The study can explore user satisfaction with WhatsApp as a communication tool, offering insights into how the platform can be tailored to meet user preferences, thus improving overall library user experience.

CONCLUSION

In summary, social media has become an essential communication and promotional tool for public libraries today. This chapter discussed various issues related to social media, including privacy concerns, digital literacy, the digital divide, and inactive library social media platforms. The researcher aims to explore and assess users' satisfaction with public library social media. By the conclusion of this study, the researcher will explain how the findings can benefit public libraries in general, with a particular focus on the Sabah State Library, as the study specifically examines public libraries in Sabah, Malaysia. The research objectives and questions are user-centered, providing valuable insights for the library's reference and improvement.

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