Social Media as a Medium for Disseminating Community Awareness of Environmental Issues in Malaysia

Hanifah Mahat [1], Siti Wardah Hussein [1], Yazid Saleh [1], Mohmadisa Hashim [1], Nasir Nayan [1], Zahid Mat Said [2], Edi Kurniawan [3]

[1]*Department of Geography and Environment, Faculty of Human Science, Universiti Pendidikan Sultan Idris, Perak, Malaysia*
[2] *Department of Biology, Faculty of Sciences and Mathematics ,Universiti Pendidikan Sultan Idris, Perak, Malaysia*
[3]*Faculty of Social Sciences, Universitas Negeri Semarang,Semarang City, Indonesia*

Abstract **– This study aims to identify the effectiveness of the use of social media as a medium to deliver awareness on environmental issues among the community in Malaysia. A survey with a questionnaire was used in the quantitative approach used in this research. The study sample, which employed a simple random sampling technique, consisted of 400 members of the Malaysian population. There was a combination of descriptive (mean, percentage) and inferential (regression) analysis. According to the study's findings, the majority of respondents use the Facebook social network to learn about environmental concerns. Furthermore, the linear regression analysis revealed that system quality, service quality, and information quality all had a significant role in customer satisfaction. In conclusion, this study clearly reveals that a large population in Malaysia responds positively to the use of social media as a medium for conveying environmental awareness with Facebook is the primary social media platform chosen by most people in Malaysia to obtain information about environmental issues.**

DOI: 10.18421/TEM123-47
https://doi.org/10.18421/TEM123-47

Corresponding author: Hanifah Mahat,
Department of Geography and Environment, Faculty of Human Science, Universiti Pendidikan Sultan Idris, Perak, Malaysia
Email: hanifah.mahat@fsk.upsi.edu.my

Received: 06 April 2023.
Revised: 14 July 2023.
Accepted: 27 July 2023.
Published: 28 August 2023.

© 2023 Hanifah Mahat et al; published by UIKTEN. This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 License.

The article is published with Open Access at https://www.temjournal.com/

Keywords **– Social media, service quality, information system quality, quality, user satisfaction.**

1. Introduction

Information and communication technology (ICT) has played an essential role in the progress of communication and innovation during the Industrial Revolution 4.0. Users of all ages now have access to the Internet. In the beginning of 2023, Malaysia had 33.03 million internet users, with internet penetration of 96.8%. In January 2023, Malaysia had 26.80 million social media users, accounting for 78.5 percent of the population [1]. The use of social media is growing more rapidly with the support of various organizations that provide the Internet networks, tele-communications network technology, and equipment to reach the network [2]. Facebook, Instagram, YouTube, Twitter, Linkedln, TikTok, WhatsApp, Telegram, Blogging, and WeChat are just a few of the social media platforms that have evolved and are widely used today.

Due to the escalating severity and frequency of environmental problems , it is of utmost importance to raise awareness and create a more environmentally responsible society through comprehensive and effective implementation of environmentally friendly strategies [3]. Most of the nation's well-known daily publications, including Harian Metro, Berita Harian, Utusan, and The New Straits Times, already have Facebook, Instagram, and Twitter profiles to share news with the public online. [4]. For instance, Berita Harian has 729,000 followers on Instagram [5], which demonstrates unequivocally that social media has evolved into a critical medium for communicating news or current issues. Social media can reach a huge target audience in a short amount of time, thus some parties will gain substantially from using it as a tool to disseminate information [6].

This clearly shows that social media has become a very important medium in delivering news or current issues nowadays. The larger the society depends on a certain media channel, the stronger the grip of the party or the owner of the media station in controlling the thinking of the audience [7]. Social media is also an ideal platform for connecting a party or individual with the public as recipients of information [8]. In addition to learning how to utilise the right medium to convey information, it is important to take into account the social media system, the content, and the service being offered since these aspects might influence how well environmental messages are received. Therefore, the purpose of this study was to identify the different social media platforms that people in Malaysia use to access information about environmental issues, as well as to evaluate the system, information, service, and user satisfaction levels associated with the use of social media to increase community awareness of environmental issues.

2. Literature Review

The literature review was divided into three parts, social media and the dissemination of environmental issues, user satisfaction, information quality system and quality system and information systems success model.

2.1. Social Media and the Dissemination of Environmental Issues

Although social media was initially developed to facilitate social communication, it now has a wide range of potentials, roles, and interests of its own, among which is the dissemination of knowledge and heightened awareness of environmental concerns using social media. Various environmental issues are frequently discussed on social media. Environmental issues encompass any situation that has an impact on environmental quality [9]. This can include air pollution, water pollution, soil erosion, marine life extinction, and oil spills [10]. In addition environmental issues are defined as problems relating to planetary systems such as air, water and soil caused by uncontrollable human disturbance and destruction [11]. These issues are contemporary and are constantly changing in response to circumstances and time.

The extent of environmental awareness and media literacy among students from science and literature streams in institutions of higher education is of great importance and should be ascertained as done in study [7]. All informants expressed a high level of interest, knowledge, and media literacy regarding environmental information obtained through social media.

However, students majoring in literature were perceived to have a greater interest in social media use than students majoring in science. Due to the assumption that social media channels are simpler to use, more accessible, and more engaging, the survey also found that the majority of informants utilised Twitter, WhatsApp, and Facebook to find out information regarding environmental concerns.

The research study explored various strategies and techniques to effectively develop a pro-environment campaign by harnessing the power of social media [12]. They asserted that numerous campaigns have been conducted online in line with technological advancements, such as social media. Due to the broad reach of social media, it has become the preferred medium for conducting online campaigns to influence the public. The study's findings thus establish the importance of social media in ensuring the success of environmental campaigns to increase public awareness and engagement, as well as to demonstrate behaviour change and an increased interest in learning about climate and environment changes.

The study explored how popular social media sites such as Twitter, Instagram, and Facebook could serve as information-sharing platforms for climate change-related concerns, recognizing them as powerful tools capable of addressing the adverse effects of climate change in a more subtle and impactful manner [13]. They discovered that, while measuring the impact of social media as a soft power approach is challenging, information sharing via social media may increase community awareness and encourage environmentally friendly practices. They also discovered that content given through social media may be swiftly disseminated and can reach a big audience while being affordable to utilize, containing simple visual message.

In addition, a study on the use of social media in 'Pergerakan Galigasa,' a trash management program administered by the Palu Municipal Government in Indonesia, was conducted [14]. The study's findings, which were obtained using descriptive and qualitative techniques such as interviews and in-depth observations, revealed that social media platforms such as Instagram, Facebook, WhatsApp, and Vlogs play a vital role in supporting and expanding the waste management movement. However, the response of the community shown in every activity and information posted in social media whether Facebook or Instagram is quite unsatisfactory. The different benefits achieved on Instagram media in relation to the Galigasa movement make the media more fascinating, even though the Galigasa movement team has not taken full advantage of the characteristics supplied by Instagram.

2.2. User Satisfaction, Information Quality System and Quality System

An information system's success depends on several different factors, including the information quality, the system, the service, and user pleasure. Information quality is the quality of a report or piece of information distributed through information systems: When the information or its presentation is of poor quality, it indirectly affects user satisfaction [15]. System quality refers to a system's ability to provide information appropriate for users' needs based on its hardware, software, policies and procedures [16]. It is defined by an information system's usability and comprehension. Users are more inclined to use an information system that requires no additional actions or effort [17].

Service quality is the gap between initial service expectations and notions and responses or information obtained via ICT [16]. Service quality includes the support and encouragement received by the user from system developers or support staff [18]. Similarly to information quality, service quality has a substantial impact on user happiness. User happiness is one of the most important measures of an information system's performance. User satisfaction defined as the feedback provided by users, indicating whether the information system fulfilled their requirements and met their needs upon utilizing the system [19].

Studies on information quality have also been conducted in order to identify the relationship between the quality of information and user satisfaction while interacting with governmental organisations on social media [6]. The effectiveness of information and communication in social media use may enhance the information delivery system, increase user acceptability, and promote user engagement. However, the study's findings suggest that respondents' usage of social media in terms of information quality and communication satisfaction is still at a modest level. It can be concluded that, the level of user satisfaction will be high and show positive feedback if the content of the information presented or shared is useful and of good quality.

Researchers have extensively investigated components of DeLone and McLean's (2003) Information System Success Model, including net benefits, user satisfaction, system quality, service quality, and information quality [20]. Examples include the relationship between information quality and user happiness, the relationship between service quality and user pleasure, and the relationship between system quality and user satisfaction. Because there is a substantial association and a positive effect between the two variables, all study hypotheses have been accepted.

The study discovered that system quality (b=0.534), information quality (b=0.285), and service quality (b=0.210) all had a substantial impact on customer satisfaction. The study was able to effectively specify DeLone and McLean's (2003) Information System Success model by integrating information quality, system quality, and service quality as the foundation for model creation. According to the study's findings, the quality of information, systems, and services may impact user pleasure.

2.3. Information Systems Success Model

Based on the DeLone and McLean Information System Success Model from 2003, which was first established in 1992 and amended and updated in 2003, the application of the user happiness, service, information, and system quality components in this study was based on their findings. This model was created as an adaption of research done by Mason (1978) and Shannon and Weaver (1949) [21]. The adoption of this model is useful making it possible to identify the characteristics and elements that contribute to an information system's effective operation. This study therefore used this model to examine the net benefits associated with users' actions while obtaining information via social media materials.

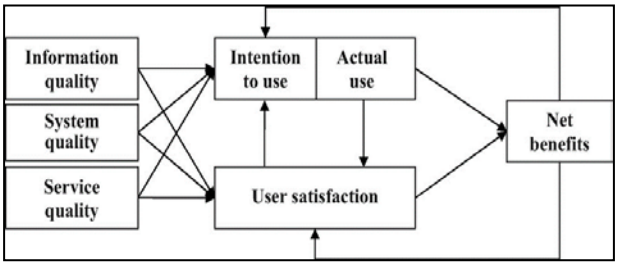


Figure 1. DeLone and McLean Information Systems Success Model (2003)

3. Method

Questionnaires are typically used as the research instrument in studies that apply a quantitative approach to collect data through survey methods. This study sampled 400 people in Malaysia using simple random sampling. Before being made available to respondents online, the questionnaire underwent validity and reliability testing. The information received from the respondents was examined using SPSS version 23 (Statistical Package for the Social Sciences).

The questionnaires developed for this study were divided into six parts: A, B, C, D, E and F. Part A consisted of the respondent's background, while Part B covered the type of social media platforms used to obtain information about environmental issues.

Following that, Part C explored items related to social media's system quality, and Part D covered the quality of social media information. Part E addressed the quality of social media services, whereas Part F addressed user happiness with social media use. Parts C, D, E, and F were evaluated using a five-point Likert scale (1=strongly disagree, 5=strongly agree).

4. Results

The study findings are divided into two major sections: the first examines the respondents' backgrounds as well as the various social media platforms used to gather information about environmental issues; and the second discusses the level of each variable (i.e. system quality, service quality, information quality, and user satisfaction) in relation to the use of social media as a medium for raising environmental awareness.

4.1. Respondents' Background

The study examined various aspects of the respondents' backgrounds, encompassing gender, race, highest level of education, and daily usage duration of social media programmes. . From the total of 400 respondents, the number of male respondents was 130 people (32.5%) while the total number of female respondents was 270 people (67.5%). Next, the category by race shows that the Malays are the highest, which is 262 people equivalent to 65.5 percent followed by the Bumiputera Sarawak which consists of 103 respondents (25.8%). As for the Sabah Bumiputera, there are 23 people (5.8%). There are nine Chinese respondents, which is equivalent to 2.3 percent. From the results of the analysis, there are only three respondents (0.8%) who are Indian, which represents the race with the lowest number of respondents compared to other races. According to the group of responders with the greatest level of education, the majority (55.8%) held a bachelor's degree, which accounts for 223 individuals. There were 74 respondents (18.5%) who possessed a diploma as their highest educational attainment. Meanwhile, for the STPM/ Pre U/ Matriculation level, there are 35 people (8.8%) and followed by the SPM level, total of33 people (8.3%). Out of 400 respondents, it was found that there were only 28 respondents (7.0%) who had a Masters degree's education level. For the year sixth level, there are three respondents (0.8%) followed by the SRP/ PMR and doctorate (PhD) level, where both levels of education have the same number of respondents, i.e. there are only two respondents equivalent to 0.5 percent.

Finally, in terms of the duration of use of social media applications in a day, the majority of respondents use social media applications for 6 hours and above, which is 185 respondents (46.3%) and followed by a period between 4 hours to 5 hours, which is 126 respondent equivalent to 31.5 percent. Meanwhile, within a period of 2 to 3 hours, there were 79 respondents (19.8%). The smallest group consisted of those who reported using social media applications for less than one hour per day. This group comprised only 10 individuals, accounting for 2.5% of the total respondents. Table 1 presents all the previously mentioned data in a comprehensive manner.

Table 1. Respondents' Background

Respondents' background		Frequency	Percentage (%)
Gender	Male	130	32.5
	Female	270	67.5
	Total	**400**	**100.0**
Race	Malay	262	65.5
	Chinese	9	2.3
	Indian	3	0.8
	Bumiputera Sarawak	103	25.8
	Bumiputera Sabah	23	5.8
	Total	**400**	**100.0**
Highest of education level	Year 6	3	0.8
	SRP /PMR	2	0.5
	SPM	33	8.3
	STPM/ Pra U/ Matriculation	35	8.8
	Diploma	74	18.5
	Degree	223	55.8
	Master's Degree	28	7.0
	Doctorate (PhD)	2	0.5
	Total	**400**	**100.0**
Use of social media applications in a day	Less than an hour	10	2.5
	2 hours to 3 hours	79	19.8
	4 hours to 5 hours	126	31.5
	6 hours and above	185	46.3
	Total	**400**	**100.0**

4.2. The Category of Social Media Platforms Utilized for Gathering Information on Environmental Matters

The majority of respondents learned about environmental issues through Facebook, which was used by 319 respondents (79.8%) out of 400.

WhatsApp was the second most popular social media platform for obtaining information about environmental issues, with 288 respondents (72.0%). In contrast, 261 respondents (65.3%) preferred YouTube, followed by 260 respondents (65.0%) for Instagram, while 188 (47.0%) chose TikTok. This was followed by 163 respondents (40.8%) who utilised Telegram and 154 respondents (38.5%) who utilised Twitter to acquire information about environmental issues. On a smaller scale, 44 (11.0%) and 29 (7.3%) respondents reported using blogs and Wiki applications, respectively. A small percentage of respondents (17; 4.3%) also used LinkedIn to obtain information about environmental issues. WeChat had the lowest usage rate for environmental issues (10; 2.5%). Respondents also suggested other platforms for obtaining information related to environmental issues, such as Google, CNN, the BBC and Twitch. Five respondents (1.3%) used Google to obtain information about environmental issues, while CNN, the BBC and Twitch were each used by one respondent (0.3%). Complete values of used social media is presented in Figure 2.

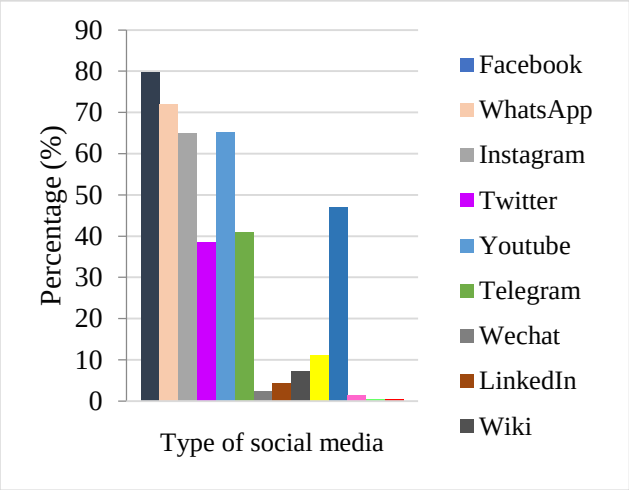


Figure 2. The type of social media platforms used to obtain information about environmental issues

4.3. Construct-Level Analyses

For each component (mean, standard deviation, percentage, and frequency) related to the usage of social media to spread community awareness of environmental concerns in Malaysia, descriptive analysis was utilised. Interpretation of the mean score range, each construct had a mean score between 1.00 and 2.33 (Low), 2.34 and 3.66 (Medium), and 3.67 and 5.00 (High Level) [22].

Table 2 show the mean score levels for the system quality, service quality, information quality and user satisfaction constructs. The majority of constructs are at a high level, with mean scores ranging from 3.67 to 5.00.

These include user satisfaction (M=4.15), system quality (M=4.34), information quality (M=4.14), and service quality (M=4.11).

Table 2. Mean score levels for the system quality, service quality, information quality and user satisfaction constructs

Construct	Low level		Medium level		High level		Mean
	N	%	N	%	N	%	
System quality	0	0.0	28	7.0	372	93.0	4.34
Information quality	3	0.8	93	23.3	304	76.0	4.14
Service quality	0	0.0	64	16.0	336	84.0	4.11
User satisfaction	2	0.5	52	13.0	346	86.5	4.15

4.4. The Impact of System, Service, and Information Quality on User Satisfaction

The results of the analysis have shown that all the independent variables have a significant influence or contribution on the dependent variable. The service quality construct is the highest contributor to user satisfaction which recorded a contribution of 59.7 percent (β=0.542, $p<0.000$). Meanwhile, system quality contributes as much as 2.1 percent (β=0.165, $p<0.000$) to user satisfaction. Finally, information quality recorded a total of 1.2 percent (β=0.164, $p<0.001$) contribution to user satisfaction. Following the independent variable, system quality the results of the study provided in Table 3 show that service quality is the construct that has the greatest impact on customer pleasure. The information quality construct has the least contribution to and influence on user enjoyment.

Table 3. The impact of system, service, and information quality on user satisfaction with regards to the usage of social media as a medium for environmental problem awareness in the Malaysian community.

Construct	The dependent variable		
	User satisfaction		
	Unstandardized Coefficient	*Standardized Coefficient*	*Sig. p*
Constant	0.490		0.002
System quality	0.559	0.542	0.000
Information quality	0.191	0.165	0.000
Service quality	0.129	0.164	0.001

R = 0.793
F=224.408
R^2 = 0.630
Sig F = .000 *significant at $p<0.05$

5. Discussion

The discussion was divided into two parts, descriptive analyses of social media platforms and construct-level analyses.

5.1. Descriptive Analyses of Social Media Platforms

Most respondents use the Facebook social media application to obtain information about environmental issues, which corroborates with the findings of study [7], meaning that most informants use social media channels such as Twitter, WhatsApp and Facebook to learn about environmental issues, because social media channels are perceived to be easier to use, more accessible, and more interactive, thus facilitating the delivery and receipt of information. By the beginning of 2023, Malaysia will have 20, 25 million Facebook users, according data from Meta's advertising resources [1]. Data from Meta's own tools shows that from 2022 and 2023, Malaysia's potential Facebook ad reach decreased by 1.5 million (-6.7%).

In addition, WhatsApp social media can also be seen to be important as a medium to obtain information related to environmental issues because there are a total of 288 respondents (72.0%) who choose to use the social media. Although no research has been conducted on the use of WhatsApp for spreading environmental awareness, the platform launched a set of stickers called 'Stand up for Earth' for download and global use in conjunction with Earth Day 2021 [23], which aimed to disseminate environmental awareness. The sticker's users tend to communicate an environmental message with one another. WhatsApp also enables users to initiate interactions, foster discussion, and share information through the creation of groups [24]. WhatsApp has been successfully used as a medium for more effective conveying and receiving messages or information in various formats such as photographs, videos, voice, or text, and it is more rapidly accepted by the target audience [25].

YouTube is a well-known resource for environmental knowledge. Malaysia has 23.90 million YouTube users by the beginning of 2023 [1]. The social networking site with the most users in Malaysia, per the data, is YouTube. Data from Google's own ad planning tools indicates that between the beginning of 2022 and the beginning of 2023, Malaysia's potential YouTube ad reach increased by 300 thousand (+1.3%). This platform is utilised for broadcasting movies from a number of various industries, such as the distribution of environmental information, in addition to sharing personal, amusing, and commercial films. Instagram is also a significant source of information on environmental issues. Instagram is critical for increasing awareness and promoting eco-friendly behaviours to influence changes in consumer attitudes [26]. How information is shared on Instagram is perceived to have an effect on user attitudes, thoughts, opinions, intentions, and behaviour [27]. For example, Zatashah is an influential Instagram user who is passionate about the environment; she has over 72,000 followers and has shared over 13,000 posts or announcements related to 'sayno2plastic' and 'zero food waste' to encourage her followers to practice green consumer behaviour. There are also Instagram accounts dedicated to sustainability and sustainable development. The World Wide Fund for Nature's profile, for example, has over 2.5 million followers and has the motto 'Building a Future in Which People Live in Harmony with Nature' [28]. These examples illustrate how Instagram can be used to disseminate scientific information to the general public and thus influence how that information is perceived.

Respondents also use TikTok to learn about environmental issues. Although the TikTok application is in its early stages of development, it has gained considerable attention and is growing in popularity. On the platform, there have been many films posted on environmental issues. For instance, [29] looked at 100 English-language TikTok videos about climate change that utilised the hashtag #climatechange. The sample received 205,551,200 views, 40,203,400 'likes' and 666,089 comments, and these figures suggest that TikTok can potentially disseminate environmental information indirectly. The study [30] also supports the use of TikTok as a platform for disseminating environmental information, as they found that TikTok users have shared various types of videos about climate change. According to the findings, there are numerous and diverse types of climate change films posted by TikTok users. This clearly shows that the public's concern for the issue of climate change. Furthermore, the produced videos are very interesting and the content description is amazing. A good performance will influence the interest of other users to share the produced video.

In conclusion, the five social media platforms described above are representative of the primary platforms used by respondents to learn about environmental issues. Each social media platform has unique advantages and capabilities, making each a suitable medium for information dissemination.

5.2. Construct-Level Analyses

The mean value for the system quality construct was high in the overall analysis. The feedback demonstrated unequivocally that social media has a level of system quality that enables it to be accepted by society as a medium for environmental awareness. The usability and accessibility of social media, as well as the efficiency of the information systems, serve as indicators of the system's quality. The mean score for the item 'social media is easily accessible at any time to obtain information about environmental issues' was high (Mean=4.65, SD=0.599). The majority of respondents, 71.0%, expressed strong agreement with the item. Authors of the study [31] also concurred on the ease of using social media to gather information and its accessibility at any time, regardless of time constraints. Social media aspects that benefit accessibility are also demonstrated in a conversation by [32], who noted that social media programmes may be used anytime, anyplace to obtain information conveniently, swiftly, and fast through the ease of the internet network.

The fact that the mean score for the social media item is easy to use to gain information about environmental concerns' was equally high (Mean=4.58, SP=0.603) demonstrates the ease with which social media platforms may be utilised to receive information about environmental issues. When users discover that an information system is simple to use or operate, they become motivated and interested and continue to use it. Social media may therefore be more effective than traditional methods for promoting and spreading messages about environmental awareness.

The extent of environmental awareness and media literacy among students enrolled in institutions of higher education found that the majority of informants preferred social media platforms such as Twitter, WhatsApp and Facebook as their primary source of environmental information because these platforms are perceived to be easier to use, more accessible and more interactive, thereby facilitating the process of information delivery and reception [7].

The efficiency of information delivery is also considered when evaluating an information system's quality. Item nine, 'social media provides a rapid communication system for conveying environmental issues', had a high mean score (Mean=4.51, SD=0.672), which is line with the findings of [32], who discovered that when technology advances, like as social media, any knowledge may be shared quickly and without limitations. According to the results of study [33], society now prefers social media to traditional media such as television and newspapers because information transmitted via the internet can be channeled quickly and efficiently.

There have been discussions on how social media may be used to undertake an environmental campaign [12], with notion that social media's capacity to reach many people is rapidly establishing it as the preferred medium for conducting online campaigns aimed at influencing the public. Apart from facilitating the successful implementation of environmental campaigns, social media can promote community behaviour and interest in climate change and the environment. The use of social media platforms like Twitter, Instagram, and Facebook as a tool for disseminating information about issues related to climate change, demonstrating that information dissemination through social media mediums not only spread very quickly and can reach the public, but only requires low cost when used in conjunction with clear visual messaging.

The mean value for the information quality construct was also high. Information quality is a critical component of an information system's success as it influences user acceptance, which affects user satisfaction. A system that can provide users with high-quality information can serve as a reference. Information quality is also measured in how the information system presents information. The mean score for the item 'textual information, graphics and videos about environmental issues uploaded to social media are interesting' was high (Mean=4.55, SD=0.635). Visually appealing elements in the presentation of information can pique the user's interest. Visual presentation of information can also assist users in avoiding boredom. This is in line with the findings of [6], who concurred with the statement for the item, revealing a high level (Mean=3.50, SD=0.728) of information presented in social media via texts, graphics, and video. This clearly shows that, with the presence of visual elements that are applied in conveying information, it will produce an interesting presentation and then be able to attract readers or receivers of information

It is also important that information is kept up-to-date. The statement 'information about environmental issues is constantly updated on social media' received a high mean score (Mean=4.16, SD=0.908). This is in line with the findings of [6], who also found a high mean score (Mean = 3.43, SD= 0.715) for the importance of up-to-date information presented via social media. Users can quickly and easily obtain information or news if the information is constantly updated. Author of the study [7] also supports this finding, as informants agreed that environmental news delivered via the internet was more satisfying than traditional media such as newspapers and magazines, owing to social media's ability to provide up-to-date and current information.

The validity of information also serves as an indicator of information quality. The item 'social media provides users with authentic environmental issue information' had a high mean score. The information or news distributed must be filtered and verified to prevent it from spreading easily via social media. The authenticity of information influences how others perceive and accept it.

The mean score for the service quality construct was also high. The extent to which users can benefit from the convenience of an information system also determines the service quality. The statement 'social media services have a high level of technical competence when it comes to communicating information about environmental issues' received positive feedback in this study, with the item receiving a high mean score. The time or length necessary for social media platforms to reply to user queries is assessed in terms of technical efficiency, indicating that social media platforms offer users with information on environmental issues promptly and effectively.

Finally, the mean score for the user satisfaction construct was also high. The statement 'I am pleased because the environmental information available on social media is concise' received a high mean score. Length does not solely determine the quality of the information conveyed on social media. However, the information's authenticity and its readability by users must be emphasised, which means it is best to include only pertinent and valuable information so the information is concise. Respondents expressed satisfaction with the information obtained through social media sites [6]. The ability of the information delivery system to provide quality and concise information increased user acceptance of the information presented and thus satisfied the users.

Respondents also agreed with the statement, 'I am satisfied that using social media application as a medium for raising awareness about environmental issues is the right choice'. This clearly shows that using social media to raise awareness of environmental issues elicits a positive response from the public. Social media has thus successfully served as a medium for raising environmental awareness while also meeting consumer needs.

5.3. The Impact of System, Service, and Information Quality on User Satisfaction Discussion

The study's third objective results demonstrated, through regression analysis, that all of the independent variables have a significant influence or contribution on the dependent variable, that is, the impact of system, information, and service quality on user satisfaction with reference to social media use as a platform for environmental concerns awareness in the Malaysian community.

Tinrinta tourism information system conducted a research to look at how the quality of the system, the information, and the services affected how satisfied Instagram users were. According to the findings of the study, all three system quality characteristics (b=0.126, p0.010), information quality (b=0.286, p0.000), and service quality (b=0.234, p0.000) influence user satisfaction with Instagram social media [16]. This demonstrates that if social media has high service and system quality, it will have a positive influence on user happiness with the programme. Similarly, comprehensive, easy-to-understand information with high validity will impact user happiness.

A review of studies on the impact of information quality on user happiness can be found at [6]. The effectiveness of information and communication in social media use may enhance the information delivery system, increase user acceptability, and promote user engagement. However, the results of the study show that the use of social media from the aspect of information quality and communication satisfaction among respondents is still at a moderate level. It can be concluded that, the level of user satisfaction will be high and show positive feedback if the content of the information presented or shared is useful and of good quality.

6. Conclusion

Understanding how to utilise an information delivery medium that is both appropriate and effective for conveying information is critical. To ensure user satisfaction with social media's effectiveness as a medium for promoting environmental consciousness, key elements such as information quality, system quality, and service quality should be emphasised. Social media can influence how the community perceives environmental messages, and social media platforms should be fully utilised to ensure that the environmental message conveyed raises community awareness and, in turn, assists in mitigating the environmental problems that are becoming increasingly acute. Inadvertently, the findings of the current study have demonstrated the need of using social media to educate Malaysians about environmental issues. Facebook is the primary social media platform chosen by most people in Malaysia to obtain information about environmental issues. Studies focusing on these three types of quality are still lacking in Malaysia, and environmental issues should be examined more thoroughly to ensure the effectiveness of information delivery. It is hoped that this study will guide future research and in taking corrective action based on the identified weaknesses.

References:

[1]. Simon, K. (2023). *Digital 2023: Malaysia*. Datareportal. Retrieved from: https://datareportal.com/reports/digital-2023-malaysia?rq=Malaysia [accessed: 05 March 2023].

[2]. Salleh, M. A. M., & Ilham, N. M. M. (2017). Pengalaman dan kesedaran pengguna dewasa terhadap isu pengawasan di media sosial. *Jurnal Komunikasi: Malaysian Journal of Communication*, *33*(1), 502–514.

[3]. Mahat, H., Hashim, M., Saleh, Y., Nayan, N., & Norkhaidi, S. B. (2020). Transformation of Education for Sustainable Development through Low Carbon Schools Community Program. *Journal of Turkish Science Education*, *17*(3), 429-442.

[4]. Fauzi, N. (2017). Penggunaan media sosial dalam dunia tanpa sempadan: Suatu kebaikan atau keburukan. *Institut Latihan Kehakiman dan Perundangan*.

[5]. Azmi, M., Rafiuddin, M., Kamalanathan, S., & Safar, J. (2019). Media Sosial dan Generasi Muda Menurut Islam. *Jurnal Channel*, *3*(2), 1-16.

[6]. Salleh, M. A. M., Basir, K., Salman, A., & Omar, N. H. (2018). Media Sosial Dalam Transformasi Sistem Penyampaian Dan Kualiti Maklumat Kolej Kediaman. *Prosiding Konvensyen Kepengetuaan dan Felo Penghuni Kolej Kediaman Universiti Awam Kebangsaan 2018*.

[7]. Sannusi, S. N. (2020). Literasi media dalam kalangan pelajar di institusi pengajian tinggi terhadap isu alam sekitar. *Jurnal Komunikasi*, *36*(2), 124-142.

[8]. Mihaela, S., Zuzana, H., Nataliia K., & Nina, K. (2020). Social media, sustainability, and environmental protection in sustainable education. *E3S Web of Conferences 208*(2), (1-9).

[9]. Salleh, A. D. (2018). Konsep penjagaan dan pemuliharaan alam sekitar menurut perspektif Islam. *Isu Syariah & Undang-undang Siri*, *19*, 122-141.

[10]. Pant, H., Verma, J., & Surya, S. (2020). Environmental issues: Local, regional, and global environmental issues. *Environmental issues: Local, regional, and global environmental issues*, 234-246.

[11]. Hanifah, M, Mohmadisa, H., Yazid, S., Nasir, N., Samsudin, S., & Saiyidatina Balkhis,N. (2020b). Determination of physical geographical components in the construction of environmental sustainability awareness index of the Malaysian society. *Asia-Pacific Social Science Review*, 20 (3), 142–152.

[12]. Fernandez, M., Piccolo, L., Alani, H., Maynard, D., Meili, C., & Wippoo, M. (2018). Pro-environmental campaigns via social media: Analysing Awareness and Behaviour Patterns. *Journal of Web Science*, *3*(1), 265-266.

[13]. Mavrodieva, A. V., Rachman, O. K., Harahap, V. P., & Shaw, R. (2019). Role of social media as a soft power tool in raising public awareness and engagement in addressing climate change. *Climate 2019*, *7*(10), 122-137.

[14]. Akifah, A., Lampe, I., & Kaddi, S. M. (2018). The use of online media in promoting social movement on waste problem. *Asian Journal of Environment, History and Heritage*, *2*(2), 33-42.

[15]. Rachmawati, I. K., M., Bukhori, Fania Nuryanti, Devi Marta., & Syarif Hidayatullah. (2020). The effect of perceived usefulness and perceived ease of use on online buying interest is through the attitude of using social media. *5th ICGSS International Conference of Graduate School on Sustainability*, 173–182.

[16]. Hardianti, Hidayatullah, S., & Respati, H. (2021). Implementation of the DeLone and McLean Information System Success Models for information systems based on social media. *International Journal of Creative Research Thoughts (IJCRT)*, *9*(2), 4361-4368.

[17]. Miftah, R., Syarif, H., & Harianto, R. (2017). Analisis kualitas sistem dan kualitas informasi terhadap kepuasan pemakai sistem informasi akademik dosen. *Seminar Nasional Sistem Informasi 2017*, 665-675.

[18]. Yakubu, M. N., & Dasuki, S. I. (2018). Assessing eLearning systems success in Nigeria: An application of the DeLone and McLean information systems success model. *Journal of Information Technology Education: Research*, *17*, 183-203.

[19]. Rachmawati, I. K., Yunus, H., Fenia Nuryanti, Maulidia Wulan., & Syarif Hidayatullah. (2019). Pengaruh kemudahan, kepercayaan pelanggan dan kualitas informasi terhadap keputusan pembelian online. *Seminar Nasional Sistem Informasi 2019*, 17–25.

[20]. Nugroho, Y. & Prasetyo, A. (2018). Assessing information systems success: A respecification of the DeLone and McLean model to integrating the perceived quality. *Problems and Perspectives in Management*, *16*(1), 348-360.

[21]. Chen, C. D., & Cheng, C. J. (2008). Understanding consumer intention in online shopping: a respecification and validation of the DeLone and McLean model. *Behaviour & Information Technology*, *28*(4), 335-345.

[22]. Best, J. W. (1977). *Research in education.* Englewood Cliffs: Prentice Hall.

[23]. Dugh, H. (2021). *Earth day 2021 today: WhatsApp rolls out this cool sticker pack with a message.* Zeebiz. Retrieved from: https://www.zeebiz.com/technology/apps/news-earth-day-2021-whatsapp-rolls-out-this-cool-sticker-pack-with-a-message-155301 [accessed: 26 March 2023].

[24]. Salleh, M. A. M., Ekhwan, Z. I., & Salman, A. (2019). Mudah guna dan manfaat aplikasi whatsapp terhadap hubungan antara peribadi masyarakat dan polis. *Jurnal Komunikasi: Malaysian Journal of Communication*, *35*(4),135-154.

[25]. Akhmarisha, N. (2017). Analisis Linguistik Terhadap Penggunaan Media Sosial Dalam kalangan Pelajar di IPTS. *AL-Lisan International Journal for Linguistic & Literary Studies*, *1*(1), 151-165.

[26]. Glucksman, M. (2017). The rise of social media influencer marketing on lifestyle branding: A case study of Lucie Fink. *Elon Journal of Undergraduate Research in Communications*, *8*(2), 77-87.

[27]. Jalali, S. S. (2021). The influence of Instagram influencers' activity on green consumption behavior. *Business Management and Strategy*, *12*(1), 78-90.

[28]. Geraldo, G., & Pinto, M.D.S. (2020). The use of social media Instagram to disseminate sustainable information. *International Journal of Librarianship*, *5*(2), 4-12.

[29]. Basch, C. H., Yalamanchili, B., & Fera, J. (2021). #Climate change on TikTok: A content analysis of videos. *Journal of Community Health*, *47*, 163-167.

[30]. Hautea, S. Parks, P. Takahashi, B., & Zeng, J. (2021). Showing they care (or don't): affective publics and ambivalent climate activism on TikTok. *SAGE Journal*, *Social Media+Society*, *7*(2), 1-14.

[31]. Manap, F. F., & Abdul Karim, A. (2017). Pengaplikasian media sosial sebagai alternatif pengajaran & pembelajaran dalam kalangan pelajar pengajian tinggi. *International Conference on Learning Innovation and Quality Education 2nd SERIES 2017*, 1-11.

[32]. Pitchan, M. A., Abd Rahman, S. N. H., & Kashim, M. I. A. M. (2018). Teori *Al-Daruriyyat* dan penggunaan media sosial: Satu perbincangan konsep. *Jurnal Komunikasi Malaysian*, *34*(4), 75-92.

[33]. Johari, M. H., Baharuddin, A. S., & Ihwani, S. S. (2019). Media sosial dan kelestarian penggunaan menurut Islam. *Prosiding Seminar Sains Teknologi dan Manusia 2019 (SSTM'19)*, 61-86.

© 2023. This work is published under https://creativecommons.org/licenses/by-nc-nd/4.0/ (the “License”). Notwithstanding the ProQuest Terms and Conditions, you may use this content in accordance with the terms of the License.