

RESEARCH ARTICLE

EXPLORING A MOBILE APPLICATION FOR REPORTING NON-COMPLIANCE WITH HALAL STANDARDS: A PILOT STUDY

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ABSTRACT - The purpose of this paper is to explore a mobile application for Halal Reporting Non-Compliance. The app is developed to enable users to report non-compliance with the Halal standards and encourage community involvement in promoting Halalan Tayyiban, as well as providing information and education on Halal issues. The project's objectives include creating a user-friendly app for reporting Halal non-compliance, fostering transparency in the Halal industry, and educating consumers about Halal standards, certification, and compliance. To achieve these objectives, market research methods were chosen in order to assess the viability and value of developing a mobile application. A cross-sectional design using questionnaires was conducted as a pilot study to potential users between May and June 2023. Sixty-eight students participated in this survey. Regarding the most important factors that respondents consider in choosing a mobile application, 48 (70.6%) consider the accuracy of information and trustworthiness of the reporting system as the most important factor when choosing a mobile application that promotes Halal compliance and enables reporting of non-compliance with Halal standards. This initial research serves as a promising foundation for future development of the Halal Report app, with a clear understanding of user expectations and preferences.

ARTICLE HISTORY

Received : 6-2-2024
Revised : 16-4-2024
Accepted : 11-6-2024
Published : 30-6-2024

KEYWORDS

Mobile application
Halal industry
Market research

INTRODUCTION

The Halal industry is expanding quickly and is unique in that it incorporates Islamic values throughout the entire manufacturing process, from the farm to the processing, storage, and transportation of goods to their final consumption. Halal compliance is important to Muslims as it reflects their religious beliefs and values. There is a demand to establish a mobile application (app) aimed at promoting and maintaining Halal compliance in the industry, especially the app that provides a platform for collecting and disseminating Halal-related data and information. The app encourages accountability in the Halal sector by giving people a place to report incidents of non-compliance with Halal standards. Companies have a stronger incentive to follow Halal regulations to protect their reputation and prevent bad press. Moreover, from the customer perspective, this app can contribute more transparency in the Halal supply chain by utilizing its reporting and monitoring features to identify non-compliance.

By empowering consumers to report non-compliance with Halal standards and promoting community involvement in Halal compliance, the app can serve as a valuable tool to establish an Islamic data centre in Malaysia. This paper aims to provide a reporting platform for non-compliance with Halal standards and encourage community involvement in promoting "Halalan Tayyiban". The concept of Halalan Tayyiban is not only about cleanliness and purity, but it is also about fulfilling the quality of product quality, processing, and consumer delivery systems. According to al-Razi (1995), the word tayyiba means clean and lawful and is characterized as good and nutritious.

Market research is essential to identify trends, assess demand for the application, and understand the current state of the market for Halal products and services. User research helps to understand the needs and preferences of Halal consumers, their attitudes towards Halal standards, and their willingness to report non-compliance. Technical research is needed to identify the latest technologies and frameworks that can be used to develop mobile applications and ensure compatibility with different devices and platforms. Regulatory research is necessary to investigate the Halal certification process, regulations, and standards in different countries and regions to ensure that the mobile application complies with the requirements. Finally, competitive analysis is vital to study existing mobile applications that address similar needs and identify their strengths and weaknesses to develop a superior product. By conducting thorough research in these key areas, developers can create a user-friendly and effective mobile application that supports Halal compliance and provides a valuable service to consumers.

The "Halal-Report" app is a mobile application designed to help users report non-compliance with Halal standards and promote community involvement in upholding Halal practices. The use of the term "Halal" in the app's name

highlights the importance of Halal compliance in the Muslim community. According to Islamic law, Halal products and services must meet specific requirements and adhere to certain guidelines. These guidelines cover a range of aspects, including the source of ingredients, the production process, and the final product's handling and storage.

The app highlights its focus on monitoring and reporting functionalities. By encouraging users to report non-compliance with Halal standards, the app aims to increase accountability and transparency in the industry. This can help improve overall compliance with Halal practices and give consumers greater confidence in the products and services they consume. Overall, the Halal app will be designed to effectively communicate its purpose and focus to its target audience. It highlights the importance of Halal compliance and emphasizes the app's role in promoting greater accountability and transparency in the industry.

LITERATURE REVIEW

Halal Industry

The Halal industry is experiencing rapid growth as Muslim consumers worldwide seek Halal-certified products and services (Azam & Abdullah, 2020). However, the lack of standardized regulations and certification processes across different regions and countries can create confusion and uncertainty for consumers and opportunities for non-compliance and fraud (Abdallah, 2021). In addition, the reporting mechanisms for Halal violations may be bureaucratic, slow, or ineffective, which can discourage consumers from reporting violations or pursuing complaints further (Ahmad et al., 2017).

Addressing non-compliance with Halal standards and promoting community involvement in promoting Halalan Tayyiban is a multifaceted issue that requires attention. Firstly, Halal consumers may feel that their voices are not being heard or that their concerns are not taken seriously by businesses, regulatory bodies, or certification agencies, leading to frustration and a lack of confidence in the Halal industry. Additionally, consumers may not be aware of the specific requirements and standards for Halal certification, making it difficult for them to identify non-compliance and report violations accurately.

Reports of non-compliance with Halal standards are frequently discussed on social media platforms, and users often post pictures and videos of alleged violations. However, these reports are sometimes seen as propaganda aimed at bringing down businesses rather than encouraging community involvement in promoting Halalan Tayyiban. According to Hadi and Abdul (2019), social media platforms have enabled users to share information and discuss issues related to Halal standards, but these discussions often lack credible sources and may be based on rumours or incomplete information. This can lead to confusion among consumers and undermine the credibility of the Halal industry.

Halal violations can have serious consequences on consumers, particularly in religious dietary restrictions. For instance, if a food manufacturer uses pork-derived gelatine in a product labelled as Halal, this would be a violation of the MS 1500:2019 standard that Haram or 'forbidden' food products are not allowed to be consumed by Muslims. The lack of transparency in the Halal industry can also be a problem, as consumers may not have access to information about the source and quality of ingredients, the processing methods used, or the certification status of a particular product or service.

The COVID-19 pandemic has highlighted the importance of food safety and hygiene, particularly in the context of Halal products and services. Consumers may be more aware of the potential risks associated with non-compliance and more motivated to report Halal violations as a result of the pandemic. Social media and online platforms have made it easier for consumers to share information and opinions about Halal products and services, but they can also contribute to misinformation and confusion. A mobile application that provides accurate and reliable information about Halal certification and allows consumers to report violations could help counteract misinformation's negative effects and promote consumer trust in the Halal industry.

Finally, the lack of consumer engagement in promoting Halal compliance can lead to a culture of complacency or apathy among businesses, which may not prioritize Halal compliance unless they face significant pressure from consumers or regulatory bodies. By addressing these additional challenges, the development of a mobile application for reporting non-compliance with Halal standards and encouraging community involvement in promoting Halalan Tayyiban can help to improve consumer safety, promote transparency and accountability, and foster a culture of Halal compliance within the industry.

Halal App

Currently, there are several mobile applications available in the market that focus on providing information and resources related to Halal certification and compliance. These include apps such as Halal Scan, Halalify, and Zabihah. This Halal Scan App will help you identify the preservatives, colourings or food chemical additives if they are Halal, Haram or Mushbooh (that is doubtful or Makrouh), while Halalify makes finding Halal eateries easier. Zabihah is another popular app focusing on Halal restaurants and providing user reviews and ratings.

The growing market for Halal products and services also presents a significant opportunity for the app to succeed and positively impact the Halal industry. According to Grand View Research (2021), the global Halal food market was valued at USD 715.6 billion in 2020, and it is expected to grow due to increasing demand from Muslim consumers and the

growing popularity of Halal certification among non-Muslim consumers. This demonstrates a substantial market opportunity for the Halal app and other Halal-related products and services.

A simple and user-friendly reporting feature is a key selling point for the new Halal app. It is easy for users to report Halal issues through the app as they can encourage more people to promote Halal compliance and ensure that Halal standards are upheld in the industry. Overall, the ease of use and convenience of the app's reporting feature could make it a popular choice among consumers who are concerned about Halal compliance and want to play an active role in promoting Halalan tayyiban.

METHODOLOGY

A cross-sectional design using a self-constructed questionnaire was adopted to address the objective of this study. The survey was conducted online using the Google Form platform, and the link for the survey was distributed to participants through social media, mainly via WhatsApp, between May and June 2023. Convenience sampling was applied among the Faculty of Industrial Management students in Universiti Malaysia Pahang Al-Sultan Abdullah as potential users. This pilot survey was conducted as a preliminary data collection method to assess the suitability of developing a mobile application, and quantitative data were gathered during this phase. The survey questions were designed to gather information on user demographics, preferences, and experiences with Halal products and services. Surveys are useful for collecting data from a large sample of users and for analyzing data quantitatively (Ganesha & Aithal, 2022). The first part of the study was based on a questionnaire focusing on (1) Demographic data, (2) Opinions on Halal, and (3) A proposed mobile application. The questionnaire survey was analysed using descriptive analysis.

RESULTS AND DISCUSSION

The survey results below provided valuable insights for developers in developing a Halal mobile app. By understanding the challenges, developers could increase their chances of success. Table 1 presents data on several demographic variables, including gender, race, and religion. Based on the data, it can be inferred that the majority of respondents are female, with only 27.9% identifying as male. Most respondents fall into the 20-29 age range, with 94.1% of the sample falling within this age bracket. Regarding race, Malay respondents comprise the largest group at 63.2%, followed by Chinese and Indian respondents at 14.7% each. The findings indicate that the majority of respondents identify as Muslim, comprising 70.6% of the surveyed population. Overall, the data provides a valuable snapshot of the demographics of the sample surveyed, which can help understand the characteristics and perspectives of the group.

Table 1. Demographic Profile

		Frequency	Percent
Gender	Female	49	72.1
	Male	19	27.9
Race	Chinese	10	14.7
	Indian	10	14.7
	Malay	43	63.2
	Other	5	7.4
Religion	Muslim	48	70.6
	Non-Muslim	20	29.4

Given the challenges businesses and customers face to increase accountability and transparency in the Halal industry, Muslim and non-Muslim respondents were asked about Halal standards, certification, and compliance. Figure 1 displays the respondents' awareness of Halal standards and the certification process. The data indicates that the majority of respondents (80.9%) are aware of Halal standards and the certification process, with only a small proportion (5.9%) responding "No." However, a group of respondents (13.2%) are "Not sure" about their awareness of Halal standards and the certification process. Nevertheless, out of the 68 respondents, 48 were Muslim, and 20 were non-Muslim. Among the Muslim respondents, none answered "No" to the question on their awareness of Halal standards and the certification process, while 2 responded with "Not sure." On the other hand, among the non-Muslim respondents, 4 of them answered "No," 7 of them answered "Not sure," and 9 of them answered "Yes."

This information suggests that religion may be a factor in determining respondents' level of awareness about Halal standards and the certification process. The fact that all Muslim respondents answered either "Not sure" or "Yes" suggests that there may be a higher level of awareness among Muslim respondents, who are likely more familiar with Halal requirements due to their religious practices. In contrast, the higher proportion of non-Muslim respondents who answered "Not sure" or "No" may indicate that they are less familiar with Halal requirements due to their religious practices or that they are simply less informed about the topic in general. Overall, the data highlights the importance of considering religious background when examining awareness of Halal standards and the certification process and suggests that efforts to improve awareness and understanding of these standards should consider the population's religious diversity.

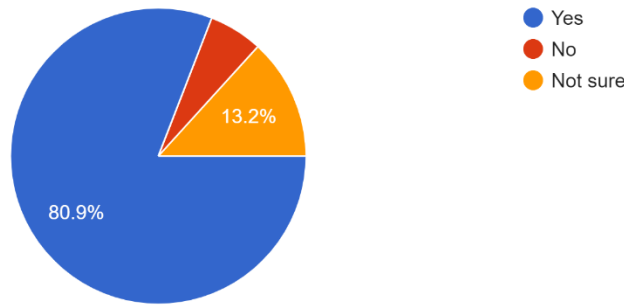


Figure 1. Respondents who were aware of Halal standards and the certification process for Halal products and services

Figure 2 shows the distribution of responses to the question on how confident the respondents are in their ability to identify Halal compliance. The respondents were asked to rate their confidence on a scale of 1 to 5, where 1 indicates low confidence and 5 indicates high confidence. Among the Muslim respondents, the majority (17 out of 48) rated their confidence as 5, indicating a high level of confidence in their ability to identify Halal compliance. A significant proportion of Muslim respondents (19 out of 48) also rated their confidence as 4, indicating a relatively high level of confidence. Only 12 Muslim respondents rated their confidence as 3, while none rated their confidence as 1 or 2.

For non-Muslim respondents, the highest number (10 out of 20) rated their confidence as 3, indicating a moderate level of confidence in their ability to identify Halal compliance. Six non-Muslim respondents rated their confidence as 4, while only one rated their confidence as 1 and 2, respectively. Two non-Muslim respondents rated their confidence as 5, indicating a high level of confidence.

Overall, 22 out of 68 respondents rated their confidence as 3, indicating a moderate level of confidence in their ability to identify Halal compliance. The distribution of responses across the different confidence levels suggests that while some respondents are highly confident in their ability to identify Halal compliance, there is also a significant proportion of less confident respondents. The distribution of responses also varied by religion, with Muslim respondents generally exhibiting a higher level of confidence compared to non-Muslim respondents.

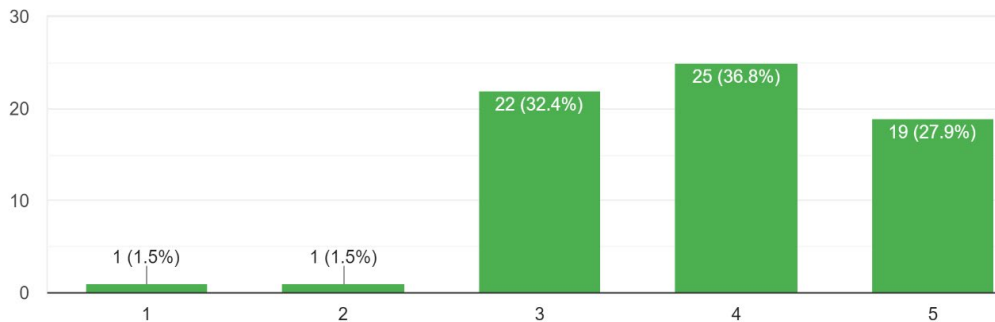


Figure 2. Respondents who were confident in their ability to identify Halal-compliant products and services

Figure 3 represents the distribution of responses, including whether they have ever encountered a situation where a product or service claimed to be Halal, but they were unsure of its compliance with Halal standards. Among the Muslim respondents, 40 reported encountering a situation where a product or service they purchased was not Halal compliant, whereas only 7 non-Muslim respondents reported the same. The majority of respondents across both groups reported having encountered such a situation. Specifically, 47 out of 68 respondents reported encountering a non-Halal-compliant product or service, while 21 reported not encountering such a situation.

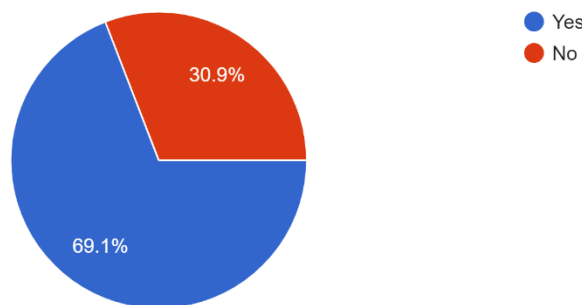


Figure 3. Respondents encountered a situation where a product or service claimed to be Halal, but they were unsure of its compliance with Halal standards

Figure 4 shows the distribution of responses of those who encountered a situation where a product or service claimed to be Halal, but they suspected it was not compliant with Halal standards. Of the 48 Muslim respondents, 38 (79.2%) reported that they had encountered a situation where a product or service claimed to be Halal was not compliant with Halal standards, while the remaining 10 (20.8%) had not encountered such a situation. Among the 20 non-Muslim respondents, 8 (40%) had encountered a non-compliant Halal product or service, while the remaining 12 (60%) had not. This data suggests that a significant proportion of the Muslim respondents have had experiences with non-compliant Halal products or services. It also highlights the importance of Halal certification and monitoring processes to ensure that products and services claiming to be Halal are indeed compliant with Halal standards.

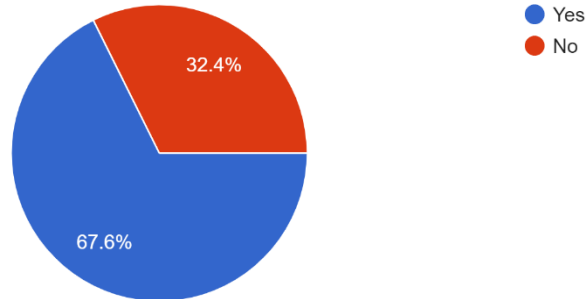


Figure 4. Respondents encountered a situation where a product or service claimed to be Halal, but they suspected it was not compliant with Halal standards

Figure 5 shows the distribution of responses from the survey participants on the likelihood of reporting a product or service that claimed to be Halal but suspected not compliant. Among Muslim respondents, 23 responded "Maybe", while another 23 responded "Yes" that they would report such a situation. Only 2 respondents said that they would not report it. However, for non-Muslim respondents, 8 of them answered "Yes", while 10 answered "Maybe" and 2 responded "No" regarding reporting the situation. Overall, the majority of respondents would consider reporting the situation, with 54.4% responding "Maybe" and 45.6% responding "Yes". The proportion of Muslim respondents who would report such a situation is higher compared to non-Muslim respondents.

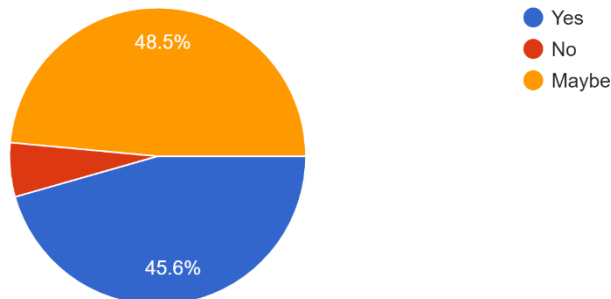


Figure 5. Respondents would report it if they encountered a situation where a product or service claimed to be Halal, but they suspected it was not compliant

Figure 6 shows that 52 out of the 68 respondents (76.5%) would be interested in using a mobile application that enables them to easily report non-compliance with Halal standards. Among the Muslim respondents, 40 out of 48 (83.3%) indicated that they would be interested in such an application, while among the non-Muslim respondents, 12 out of 20 (60%) expressed interest. Additionally, 13 respondents (19.1%) indicated that they were unsure whether they would use the application, while only 3 respondents (4.4%) said they would not be interested.

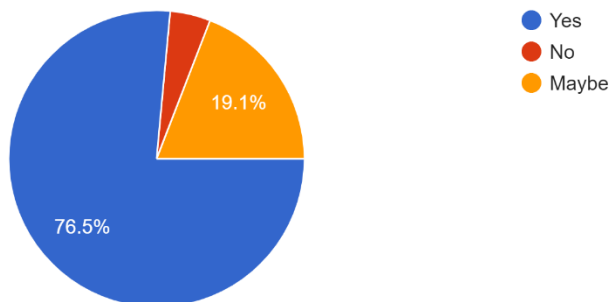


Figure 6. Respondents who would be interested in using a mobile application that enables you to report non-compliance with Halal standards easily

Figure 7 shows the responses of the survey participants regarding the features they would like to see in a mobile application that promotes Halal compliance and enables reporting of non-compliance with Halal standards. Out of the 68 respondents, 52 of them desired a user-friendly interface, 54 wanted a quick and easy reporting process, 47 wanted educational resources on Halal standards and certification, 34 respondents desired integration with Halal certification authorities, 31 wanted anonymous reporting, and 36 desired real-time updates on reported incidents of non-compliance. Among the Muslim participants, the most desired feature is user-friendly, followed by a quick and easy reporting process. However, in contrast to non-Muslim participants, the most desired feature is educational resources on Halal standards and certification followed by a quick and easy reporting process.

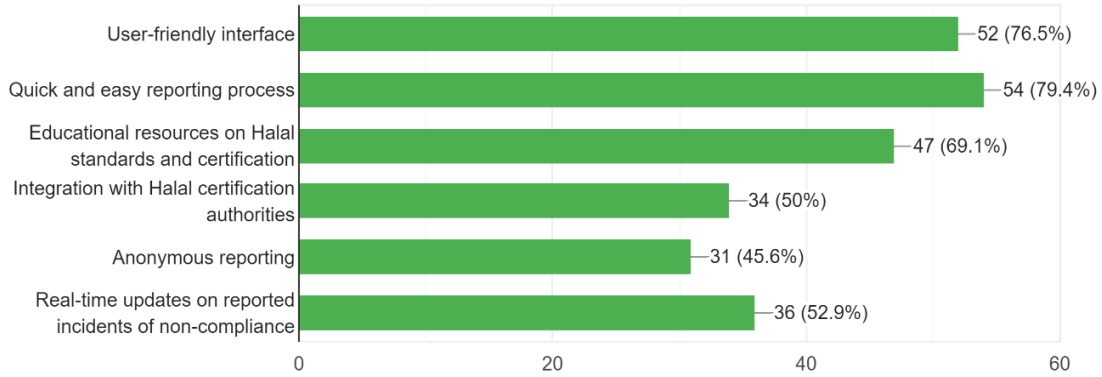


Figure 7. Features that respondents would like to see in a mobile application that promotes Halal compliance and enables reporting of non-compliance with Halal standards

Figure 8 shows that the majority of the respondents, totaling 48, consider the accuracy of the information and the trustworthiness of the reporting system as the most important factors when choosing a mobile application that promotes Halal compliance and enables reporting of non-compliance with Halal standards. User-friendliness and availability on multiple platforms (iOS, Android, etc.) were also deemed important, with 44 and 46 respondents selecting them, respectively. Reviews and ratings by other users were the least considered factor, with only 35 respondents selecting it. These results suggest that potential Halal compliance mobile application users prioritize accuracy and trustworthiness above other factors when choosing such an app. Developers should consider these factors when designing and promoting their mobile applications to increase user adoption and engagement.

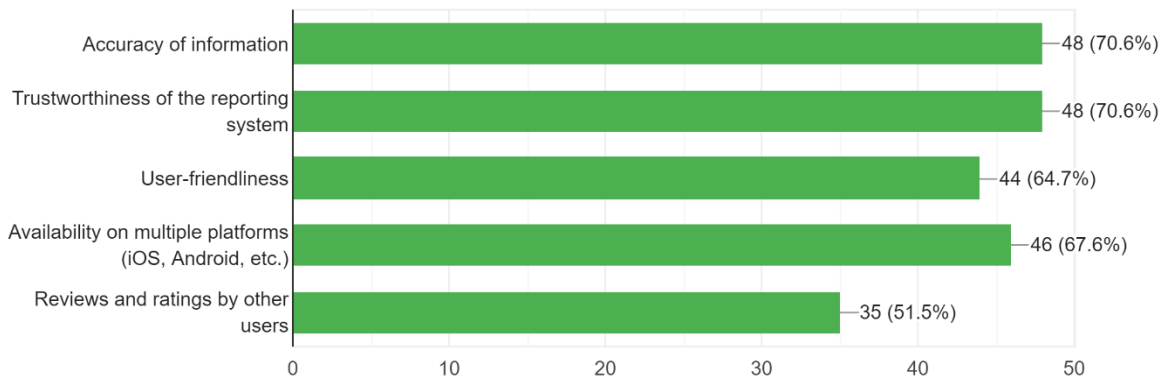


Figure 8. The most important factor in respondents choosing a mobile application that promotes Halal compliance and enables reporting of non-compliance with Halal standards

Looking at the likelihood of recommending the mobile application (Figure 9), it can be seen that 24 out of the 27 respondents who rated the app with a score of 5 are Muslims, indicating a higher likelihood of recommending the app among Muslim respondents. On the other hand, among the respondents who rated the app with a score of 4, 17 are Muslims, and 6 are non-Muslims, suggesting that both Muslim and non-Muslim respondents are relatively likely to recommend the app. Overall, this data suggests that Muslim respondents are more likely to recommend a mobile application that promotes Halal compliance and enables reporting of non-compliance with Halal standards to their family and friends compared to non-Muslim respondents.

In the survey, 11 respondents provided feedback on how the Halal mobile application could be improved. Two suggestions were made to add more language options to the app to reach a wider audience. One respondent suggested expanding the app's features beyond just identifying the Halal status of food products. They recommended adding additional features such as Halal food and restaurant recommendations, Halal travel suggestions, and Halal product reviews. This feedback can be used to improve the app's overall functionality and make it a more comprehensive resource for users looking to live a Halal lifestyle. By incorporating these features, users will have access to a wide range of information and recommendations, making it easier for them to find and choose Halal options that fit their preferences

and needs. Another respondent suggested allowing users to identify the Halal status and ingredient components of different brands of food products by entering their names or capturing pictures of the products. A few respondents mentioned the need for bug fixes and improvements to the app's functionality. One respondent suggested upgrading the app's law, while another requested a QR scanning feature. Some respondents emphasized the importance of not requiring too much data usage for the app. Overall, these suggestions and feedback can be used to improve the Halal app and provide a better user experience.

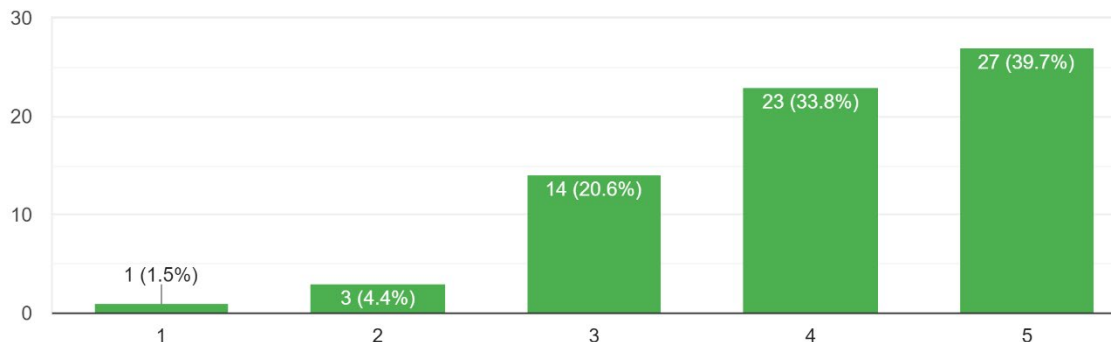


Figure 9. Likelihood of recommending a mobile application that promotes Halal compliance and enables reporting of non-compliance with Halal standards to family and friends

CONCLUSION

This paper explored the potential of a mobile application for Halal reporting non-compliance with a multifaceted objective. The Halal Report app serves as a tool to enable users to report violations of Halal standards, promote community participation in adhering to the principles of Halalan Tayyiban, and provide important information and education on Halal matters. The objective is to create a user-friendly reporting app, improve transparency within the Halal industry, and educate consumers about Halal standards, certification and compliance. The pilot study, which included responses from 68 participating students, shed light on the critical factors influencing users' preferences when selecting a mobile application. Notably, when selecting a mobile application that aims to promote Halal compliance and facilitate reporting of non-compliance with Halal standards, a significant proportion (70.6%) emphasized the accuracy of the information and the trustworthiness of the information reporting system. This initial research serves as a promising foundation for future development of the Halal Report app, with a clear understanding of user expectations and preferences. It highlights the importance of ensuring accuracy and trustworthiness in the design and functionality of the app to effectively promote user engagement and community participation in promoting Halalan Tayyiban.

As we move forward, further research, development and refinement will be required to realize this innovative idea and contribute to the larger cause of maintaining Halal standards and values in our communities. The app encourages accountability in the Halal sector by giving people a place to report incidents of non-compliance with Halal standards. Companies have a stronger incentive to follow Halal regulations to protect their reputation and prevent bad press. Through the app's ability to report and monitor non-compliance, users may help increase transparency in the Halal supply chain because customers may learn more about the reliability of Halal goods and services, and this transparency increases customer trust. Stakeholders can pinpoint areas for improvement in the Halal certification procedures and enforcement by using the app's data collection capabilities, which can offer insightful information about non-compliance patterns. This data-driven approach makes the ongoing improvement of Halal standards and practices more accessible.

CONFLICT OF INTEREST

The author(s), as noted, certify that they have NO affiliations with or involvement in any organisation or agency with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, jobs, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, expertise or beliefs) in the subject matter or materials addressed in this manuscript.

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