Universiti Teknologi MARA
Cawangan Perlis
Jurnal Intelek

Volume 18 Issue 2 (August) 2023

Managing Muslim Funeral Reporting Using E-Easy Funeral with Utilization of Instant Messaging

Nor Izzat Shazwan Anuar[1], Siti Zulaiha Ahmad[2*]
[1]Pusat Ekonomi Digital Keluarga Malaysia (PEDi),Taman Intan Jaya, 36700 Langkap, Perak
[2]Kolej Pengajian Pengkomputeran, Informatik dan Media, Universiti Teknologi MARA, Cawangan Perlis, Kampus Arau, 02600 Arau, Perlis, Malaysia*

*Authors' Email Address: [1]izzatshazwan19@gmail.com, *[2]sitizulaiha@uitm.edu.my*

Received Date: 15 April 2023
Accepted Date: 4 July 2023
Revised Date: 5 July 2023
Published Date: 31 July 2023

*Corresponding Author

ABSTRACT

Managing the funeral process among Muslims usually depends on the mosque committee's competency to inform the family of the deceased. Various problems have been faced by users when reporting death case funeral arrangements such as the lack of a specific platform for them to create a death report. Currently, users need to make a phone call or send a Short Message System (SMS) to report the case to the committee. This has made it difficult for the committee to manage the funeral arrangements as the information was not received or communicated clearly. Therefore, this study introduces a simplified approach to funeral reporting application using a mobile platform integrates with instant messaging services to assist users in making death reports to the committee for funeral management known as E-Easy Funeral. This study simplifies and adapts the Waterfall Model phases into a 3-phases development model, which are analysis and design, development, and evaluation. E-Easy Funeral targets Muslim communities and mosque committees that manage the funeral process. Hence, this study conducted usability testing and user acceptance testing to measure the usability and the acceptability of E-Easy Funeral among the targeted users (46 participants) using the usability test instrument and the Technology Acceptance Model instrument. As the result, based on the average means core of the three dimensions of the usability test and the four dimensions of the User Acceptance Test, clearly shows that the E-Easy Funeral application is usable and positively accepted by the users. Having considered the evaluation results and the responses by the participants, this study has successfully introduced a simplified and user-friendly mobile application for a funeral reporting tool to inform death cases for funeral management.

Keywords: *funeral management, instant messaging, mobile application, usability testing, user acceptance testing,*

INTRODUCTION

Death is a natural event that all living beings will face. It is the responsibility of every Muslim to manage the body when a death happens. In Malaysia, funeral management refers to the process of handling someone dead such as bathing, shrouding, praying, and burying which follow all the guidelines that have been practiced by Islamic law and the local tradition. To implement all the processes, according to Salleh et. al. (2017) an expert is responsible to manage the body according to Islamic law which is

ISSN: 1675-9885 / eISSN:2231-7716
DOI: http://10.24191/ji.v18i2.22176

called '*pengurus jenazah*'. The change of generations present in different decades still maintains the common practices that had been practiced by the earlier society such as managing and arranging the funerals among the locals. In addition, the advancement of technology grants an opportunity to support the Islamic Malay community with their funeral arrangements (Widayani, Nurida, & Andri, 2019).

At present, there is some difficulty faced by the family and community to inform the committee about the death that happened during their residency. Instead of that, sometimes there is some difficulty faced by the committee to track the exact location of the body house. Based on the preliminary study that has been conducted with 87 Malaysian respondents, almost 41.7% agreed that they faced some precise the exact location of the body located. Frequently there is some uncompleted information sent to the committee through a call or SMS. Furthermore, when the user delivers the information through the call, they only inform them information related to the location and the gender of the body.

According to Kaufmann and Peil (2020), instant messaging is the most effective tool that can be utilized as a real-time and asynchronous communication channel, in which it removes the obstacle that prevents people from interacting. Referring to the preliminary study findings, almost 96.7% of respondents agree that a function for reporting the death is developed. Instead of that, 96.7% of respondents also agree by developing this mobile application could overcome the problems that occur when reporting about death cases. Based on the situation, there is no precise information that is needed to run the shrouding and burial process such as the measurement of the height and width of the body. By using instant messaging applications such as WhatsApp, a new method could be introduced for the community to send all the information by using the existing template where they will be inserting all the information required for the shrouding and burial process. Instant messaging can help users save time by reducing the time they spend looking for phone numbers or email addresses, as well as providing a low-barrier support option (Trivette, 2021).

Mobile technology is a platform that is often developed by application developers to facilitate the daily affairs of users today. According to Gunter (2019), one of the most prevalent technologies of the twenty-first century is the mobile phone. To enhance the operation of mobile technology, some technology could be integrated into the mobile platform. Other than that, mobile technology also could be integrated with the Instant Messaging tools such as Short Message Service (SMS). Access to technology helps in accessing the topic at hand, distinguishing facts from views, communicating with the group to establish a point of view, and analyzing the supplied data to produce perspective (Khosrow, 2020). To manage funeral management, the use of mobile applications and websites could help enhance the information management process.

Notifications could be sent in many methods to deliver the information to the users. Short Message Service (SMS) is one of the methods that always be used to notify the user after receiving the service for confirmation or remind the users if their credits for the cell phone had nearly reached the expiring date. Instead, there is another method that can be implemented to integrate this mobile application with the notification which is WhatsApp. According to Yulianto, Setia, & Atmaja, (2021), WhatsApp is a multi-platform instant messaging application that is used on the mobile phone that grants the users to send and receive messages similar to Short Messaging Service (SMS) that requires an internet connection without any payment needed to run service. Nowadays, WhatsApp has been frequently used by users to chat with their friends and allow users to upload and send media to other users. Other than that, this application also can run on mobile multi-platform operating systems such as iOS and Android.

Based on the situation, the solution is aimed to assist the family of the deceased and community in managing the funeral more efficiently. It is also expected to be useful to the mosque committee to manage all the preparation starting from the bathing of the body until the burial process. Furthermore, the apps make information related to the body delivered accurately to the mortuary enhancing the processes of funeral management.

LITERATURE REVIEW

This section elaborates and discusses literature related to Islamic funeral management elements, mobile applications and architecture, and instant messaging services. Discussion related to funeral management is merely to understand the process of preparing materials to manage the deceased such as the number of shrouds to be used, the size of the coffin, and the burial pit for burial purposes. This study focuses on utilization of mobile applications to manage funeral services by integrating with instant messaging.

Islamic Funeral Management

The funeral process is one of the procedures that need to be done by the community toward the body. Every Muslim need to be managed the body according to the Islamic funeral process. The procedures for the Islamic funeral process are including bathing, shrouding, and praying, and burial for the "*janazah"*.

Muslim funeral management is known as "*Fardhu Kifayah*" (Katan, Nasrijal, Man, & Noor, 2019), which means the process must be managed by a certain group of people who are knowledgeable in handling it. The corpse of a Muslim in Arabic term is known as "*Janazah*", which is an individual that had passed away. It is similar to the term referred to by Salleh et. al. (2017), an individual who had passed away and loses his life in the world is usually mentioned as a "*janazah*". In addition, there are some other common terms in Malay culture during the funeral process from preparing the "*janazah*" to the burial service. Those terms such as morgue ("rumah mayat"), funeral car ("*kereta jenazah*"), coffin ("*keranda*"), "*Kafan*" (plain cloth to wrap the body), and many other terms. The deceased person who has lost his life in this world and is buried at the graveyard is referred to as burial. The responsible team who handles the process is also known as the mortuary assistance "*Pengurusan Jenazah*" service (Zaki, 2021). They are usually residents and committees from a local mosque. This team will manage the funeral management by performing all the principles and rules based on Islamic jurisprudence.

The first process of funeral management is bathing the "*janazah"*. It is to cleanse the body of the deceased from impurities as well as to glorify the rank of the deceased (Nugraha, 2020). The process of shrouding the corpse is the second step of the procedures of Islamic funeral management. There are differences in the method of shrouding according to the sex of male and female corpses. Usually, five pieces of the white shroud are used for male corpses and three pieces of the shroud are used for female corpses. Praying is the third process in Islamic Funeral Management. According to Noor (2018), it is obligatory to pray after the body has been veiled. The corpse will be prayed led by an Islamic ritual leader known as the Imam. The term imam comes from an Arabic term that describes a "leader who guides a group" (Asyraf, 2015). This is the last process of Islamic Funeral Management. The corpse should be buried in the "*lahad"* after it has been bathed, shrouded, and prayed for and taken to the cemetery for burial (Noor, 2018). According to Mulyono (2020), "*lahad"* is a space with an adult standing depth of one wave upwards and a width of one meter that can accommodate a buried corpse. The purpose of the burial of the corpse is to prevent the unpleasant smell of the corpse from the "*lahad"* that allows the wild animal to dig the grave. To preserve the dignity of the corpse as well as the well-being of the people around the cemetery, the depth of the grave does not smell the stench of the corpse, and it is unlikely to be dismantled by wild animals (Noor, 2018).

Mobile Technology

Mobile applications facilitate people's daily work by simply performing their daily routines using only a smartphone. According to Mroczkowska (2021), the mobile application develops to run on a mobile device. Examples of mobile devices could be tablets or smartphones. A mobile application could be developed from various types of functionalities that assist humans to manage their activity. Currently, there are three types of mobile applications which are native, web, and hybrid application. Instead of that, mobile applications also have many various types such as business and productivity

applications, educational applications, lifestyle applications, and mobile commerce applications. Currently, the number of users use smartphones has rapidly increased from year to year. According to O'Dea (2020), 7 billion people all over the world will be using mobile devices in 2021. For this project, a mobile application could be used as a platform because most people prefer to use mobile applications than browsing the website. The number of application downloads in 2022 will increase by 258 million compared to 168 million in 2017 which is a sharp increase (Cheney & Thompson, 2018). Managing a system using a mobile platform requires a mobile database for data manipulation.

A database is generally a platform used to store various types of data. This platform is often used by business players to keep all records related to their business transactions. In addition, there is a database dedicated to mobile devices. According to Akers (2020), a mobile database serves to connect a mobile computer to its system using wireless technology. In addition, the mobile database technology itself uses a wireless network that works on the servers and clients involved. There are various advantages to using a mobile database in running daily affairs in data handling. Akers (2020) stated that the use of mobile databases can be done using multiple devices and accessed in multiple locations. Instead of that, there is some type of mobile database that could be used in the project such as SQLite, Couchbase Lite, and Firebase. This study employs Firebase for database development in mobile application platforms as it can reduce the time and effort in the development phase. All backend expansion prerequisites have been fitted in the Firebase database which prevents developers from reinventing the wheel for each activity involved (Vyas, 2021).

Instant Messaging Services

Communication is one of the ways for people to interact with another person, especially when they are delivering information. The use of instant messaging could assist the process of delivering information through the platforms for the users. Instant messaging is real-time online communication that uses technology through instant messaging software or applications that involves two or more users who use several activities such as text, audio, and video communication that is accompanied once by a directory, file, and content exchange session (Baldikov, 2020). Currently, there are many examples of instant messaging such as Jabber, Spark, Slack, Google Talk, and WhatsApp. WhatsApp is the most instant messaging application used by mobile users to communicate with each other. Tankovska (2021) in Statista stated that there are two billion users who utilized WhatsApp messenger in January 2021 and it is similar in January 2022 as shown in Figure 1. This type of messaging is also available on iOS, Android, and macOS. In addition, this application also allows the users to make a call, and upload files such as pictures, videos, voice notes, and documents. Because of that, WhatsApp is an instant messaging app that is the best to use in this project compared to other apps. This is because it has a function that allows users to upload important files through this medium. In addition, most of the users also use this application in their daily affairs while communicating with each other.

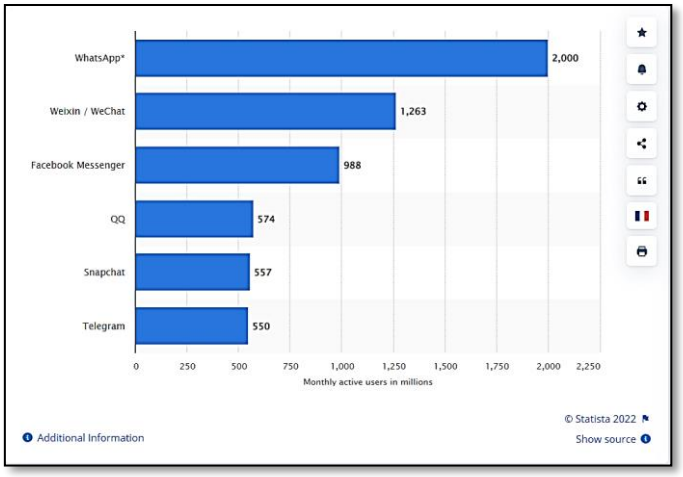

Figure 1: Mobile Messaging Apps Popularity (Source: www.statistica.com)

METHODOLOGY

This study adapts the 3-phase development model as methodology (Figure 2) based on System Development Life Cycle phases (Casteren, 2017). It comprises the analysis and design phase, development phase, and evaluation phase. This study utilized quantitative method in analyzing the preliminary investigation and user acceptance testing results descriptively.

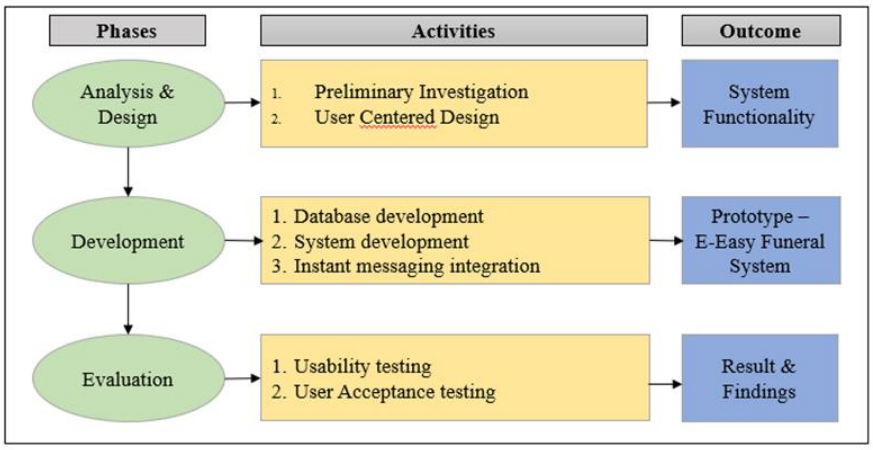

Figure 2: 3-Phase Development Model

This study conducted a preliminary study to investigate the necessity and the needs for the funeral management system including the perceptions on the utilization of the mobile platform. With the total respondents of 87, this survey involved the public community and mosque committee who handle the funeral process. Based on the preliminary study, most of the respondents have not experienced using both platforms which are websites and mobile applications that provide services for funeral management. All of them have a positive expectation of the utilization of mobile funeral system management. Having considered the findings, this study further explored the requirements and features that are necessary for the apps using user-centered design approach. The outcome of this study, managed to produce a low-fidelity prototype with system functionality requirements. All functions and features were thoroughly discussed with the representatives of the mosque committee in Langkap, Perak. Figure 3 summarized the overall needs of the system functionality.

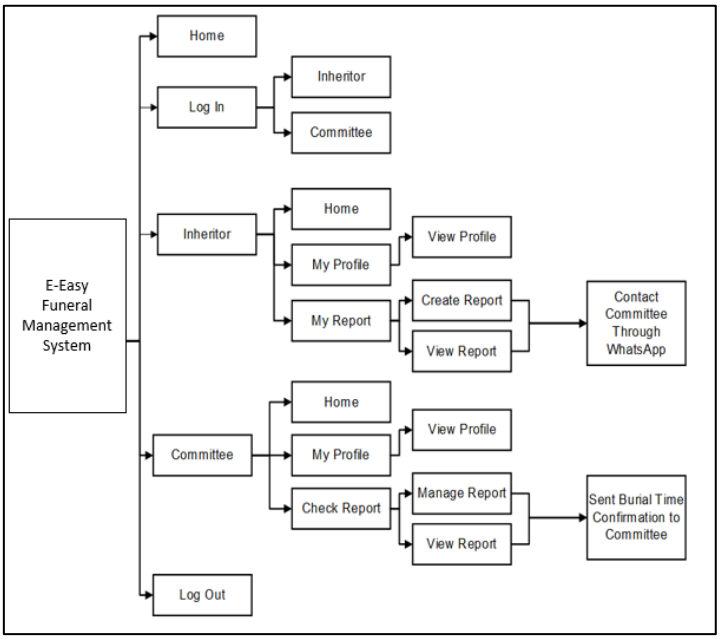

Figure 3: System Requirements and Functions

In the second phase, this study carried out the development process by creating the database and continued with system development using Firebase and Android Studio software. Having completed Next, the integration of the instant messaging service, which is WhatsApp to ensure that the communication element could facilitate the users in arranging the funeral process. At this stage, the application was tested internally to validate that all the features are well integrated. Once those features are functioning, this study undertook two types of evaluation process, which are usability testing and user acceptance testing. At this stage, 46 participants (public communities and mosque committee) engaged in the testing sessions after the exploration of the E-Easy Funeral application. They were selected randomly from public community and mosque committee of Masjid Al Makmur, Langkap, Perak.

The instrument for usability consists of 16 items of three main criteria which are the use of system, information quality and interface quality using 5-Likert Scales (1 – Strongly Disagree to 5 – Strongly Agree). It is adapted from Post-Study System Usability Questionnaire (PSSUQ) (Lewis, 1995). For the UAT, this study adapted the Technology Acceptance Model (TAM) (Davis, 1995; Muhammad Hassan, 2019) instruments which consist of four main criteria with overall 13 items. It is a customer-centered approach to measuring new technology uptake to determine the success of the new technology adoption. hat comprises four main dimensions, which are Perceived Ease of Use (PEU), Perceived Usefulness (PU), Intention to Use (BI), and Attitude (ATT). Similar to PSSUQ, this instrument uses 5 point Likert scales that ranged from strongly agree to strongly disagree. Table 1 lists the criteria and number of items of item related to each criterion for usability testing and UAT.

Table 1: Summary of Criteria, No of Item for Usability and User Acceptance Testing

Testing	Criteria	No of Item
Usability	Usefulness of System	6
	Information Quality	6
	Interface Quality	4
User Acceptance	Perceived Usefulness	3
	Perceived Ease of Use	5
	Attitude	3
	Intention to Use	2

E-EASY FUNERAL APPLICATION

The E-Easy Funeral application is designed to allow the family and community to report the death and send the information about the body to the committee for the funeral process. With this mobile application, the committee can view all the information and take fast action to manage the funeral process. There are two roles of users can make a report and arrange the funeral process, they are the deceased family and the funeral committee who are usually the mosque council members. Both users are required to register and keep their profiles updated.

As for the family of the deceased, death reporting, viewing funeral arrangements, and chatting with the committee are among the main features of the E-Easy Funeral application. This application also provides demonstration videos for the users to learn about the funeral process. Meanwhile, the admin is provided with three main features, which are reviewing the report submitted by the deceased family, managing the report by arranging the funeral preparation, tracking decease's location based on the registered address, and assisting the family using embedded WhatsApp messaging (Sembang menu). Figure 4 and Figure 5 demonstrate samples of the interface design of the E-Easy Funeral Application for the deceased family user and the administrator. Figure 6 is an additional content that is useful for the users to understand and learn the funeral management procedures. There are two types of procedure videos placed on this page that describe in detail related to general and covid funeral management procedures. This video is a guide for users to do the initial process of managing the body before the funeral manager arrives for further action.

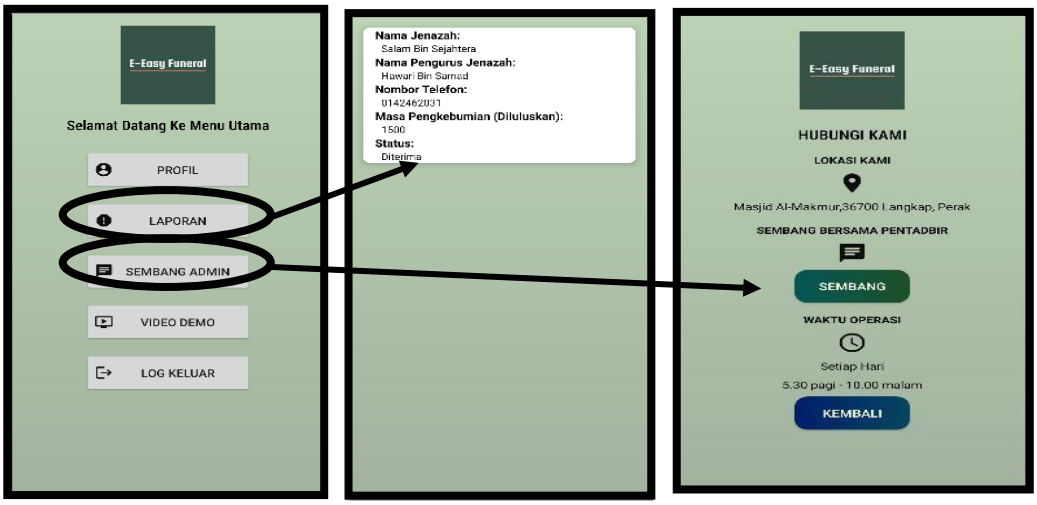

Figure 4: Main Menu, Death Report Result and Sembang Page of E-Easy Funeral for Deceased Family

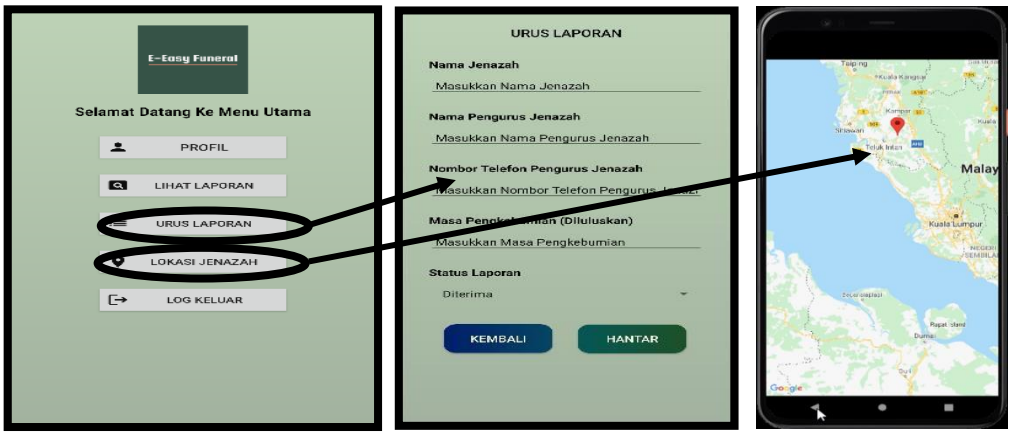

Figure 5: Menu, Managing Death Report and Decease Location of E-Easy Funeral for The Administrator.

Figure 6: User Video Demonstration

RESULT AND DISCUSSION

As discussed in the Methodology section, both evaluations were conducted to measure the usability and acceptability of the application features, respectively. Consequently, this section describes the testing procedures and results in analysis of each testing result. This study obtained UiTM Research Ethic Committee (REC) approval and consent from the participants to evaluate the E-Easy Funeral application. They filled in the consent form included in the evaluation instruments.

During the testing session, the participants were given chances to explore the application before they evaluate the app using an online questionnaire for its usability and acceptance. The implementation of usability testing on this project is to identify all possible weaknesses in the product and determine all the good features that have been identified by the users of this product. There were 46 participants engaged with the usability instrument first during their exploration. Meanwhile, the User Acceptance Test (UAT) instrument was given after they finished the exploration. Table 2 tabulates the demographics of participants for both evaluations.

Table 2: Demographics of Participants for Usability and User Acceptance Evaluation

Demographic	Total N = 46		
	Public User Nu=33	Funeral Committee Nc = 11	Percentage (%)
Gender			
Male	15	7	48%
Female	18	4	52%
Age			
Below 30	10	2	30%
31 – 40	13	3	35%
Above 41	10	6	35%
Experience Using Apps			
Yes	33	11	100%
No	0	0	0%
Experience Handling Funeral			

Yes	13	11	52%
No	20	0	48%

Result Analysis and Findings

This subsection discusses the analysis and findings of the two series of testing. The result of usability testing would reflect the usefulness, quality and interface design provided in the application. Meanwhile, findings from the UAT would measure the readiness and acceptability of the user to use the application for the death reporting and funeral work process. The findings from these evaluations provide insights on how the e-Funeral is useful and could assist the community and the committee to manage the funeral process. The following paragraphs discussed the result and findings.

Table 3 tabulates the mean score of each criterion which reflects the user's perception of the E-Easy Funeral. The participants' perceptions were analyzed in the value of mean score with a minimum and maximum mean score of each criterion.

Table 3:. Summary of Usability Testing Result

Criteria	(N = 40)		
	Minimum Mean Score	**Maximim Mean Score**	**Overall Mean Score**
Usefulness of System	4.45	4.6	4.5
Information Quality	4.23	4.6	4.49
Interface Quality	4.45	4.55	4.46

The first criterion is related to the E-Easy Funeral usefulness based on its ability to provide several productive features. The mean score of 4.5 shows that respondents agreed that they can become more productive when using E-Easy Funeral as they were able to access the system using a mobile application. A majority of participants strongly agreed that they can control the system smoothly and accomplish the funeral workflow step-by-step with ease for example reporting death cases and communicating with the committee on the funeral process. The application also consists of video tutorial that enables them to learn the funeral process conveniently way. Those imply their satisfaction regarding the usefulness of the application.

Regarding the quality of the information provided by the E-Easy Funeral application, they agreed that the system provides clear labels as a guide to fulfil out death case reports. In addition, the participants were able to identify the type of information needed as they filled out the report in the answer space because there was a label on the information required. This was evidenced by the minimum, maximum mean scores average mean score being in the range of agree on a scale. During the testing session, the participants also found that the information about the tasks that they need to complete in the system is clear. This means that the information provided for respondents to perform tasks such as creating new accounts, and creating, viewing, and managing reports is clear and helps them complete those tasks. This was supported by an overall mean score of Information Quality is 4.49. It shows that information provided in E-Easy Funeral could assist them in completing all tasks.

Interface Quality is the last criterion measured for usability evaluation. The result indicates that the respondents agreed that the interface of the application is pleasant with the mean score being almost equivalent. Responses by the participants revealed that the interface of this system is clear and easy to understand. This can be evidenced by the minimum mean score of 4.45 and maximum mean score is 4.55. It shows that they can easily interact with the navigation that is intuitive and simple. Even though

the participants were satisfied with the simple interface design, this study admits that the application should provide a more interesting interface design using a modern and attractive interface design. Having analysed the result of each criterion, this study found that E-Easy Funeral successfully introduces a usable application as the overall mean score of usability testing is 4.48.

As explained earlier, this study extracts the user perceptions on acceptance by analyzing the UAT result. Figure 7 illustrates the overall mean score for PEU, PU, AT, and BI. The analysis of UAT is explained with the comparisons of usability testing to verify the results.

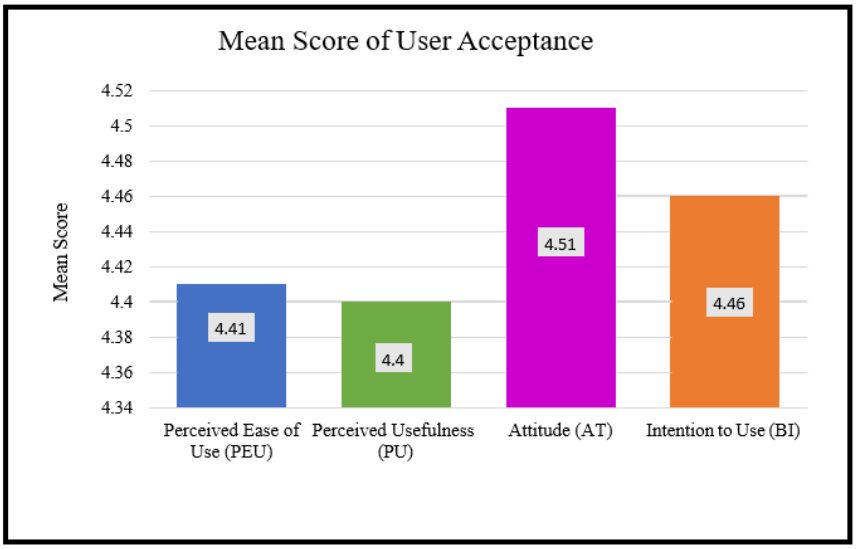

Figure 7: User Acceptance Result

Considering the result of each criterion, this study found that they are almost equivalent with a slight difference each. Among those four criteria, ATT contributes the highest mean score, which is 4.51, which is consistent with the result of usability testing on the system used as users have a positive agreement on using the application. Attitude criteria proved to have the most significant influence among respondents giving the perception that the idea of the E-Easy Funeral application is applicable and favorable. PEU and PU have the lowest mean scores (4.41 and 4.4, respectively), but they do not necessarily contradict one another because the scale ranges are similar. However, these scores gave a great signal that the application should be improved in terms of its process flow from the reporting process until the end. The intention in using the application with the means score of 4.46 is suggesting that the participants have confidence and belief in the application. Considering that they have access to the application, most of the participants agreed to utilize the death reporting feature in the future. In conclusion, the participants tend to accept and use this application as almost all criteria have high mean scores (overall mean score = 4.5).

Figure 8 depicts a comparison between the overall usability test and the user acceptance test results. It clearly showed the results differing with a very slight score (means score difference = 0.02). After both tests were conducted with the same participants to evaluate the mobile application for funeral reporting, the UAT mean score obtained a higher total mean score than the Usability Test. On top of that, based on both results, the E-Easy Funeral application can be considered as a consistent application regarding its usability or acceptability among the targeted users. The interrelation between both results verified that an application must be usable in order to be accepted by the user.

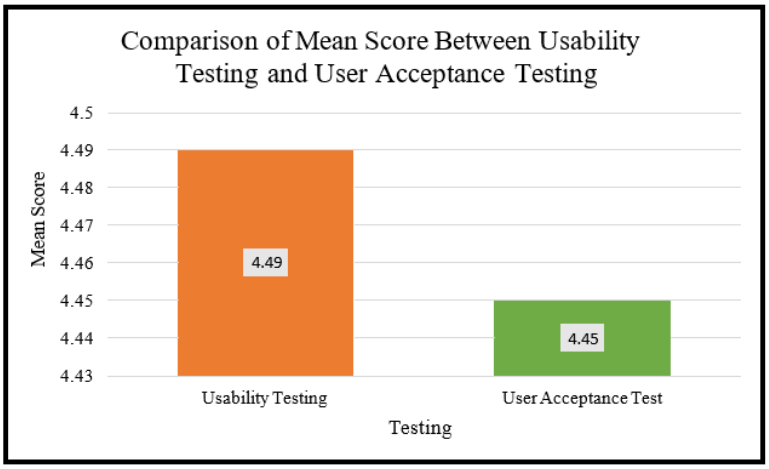

Figure 8: Result Comparison

CONCLUSION

In conclusion, the motivation of this study is based on the difficulties faced by the family to deliver all the information required by the committee to manage the body. The difficulties sparked some encouragement for the development of this mobile application. This study can improve the process of managing *"janazah"* for the funeral. This also reduces the time taken and gives reasonable time for the committee to manage the funeral preparation stuff. Therefore, this study introduced an application known as E-Easy Funeral as an alternative tool to ease the process of death reporting. The goal is to provide a mobile app that allows families and communities to report a death to a committee that will oversee the funeral process. This study adapts 3-phase development based on SDLC, which consists of analysis and design, development, and evaluation. As the outcome, this solution could be seen as a community contribution to ease the family who is in mourning and simplify as well as to speed up managing the *"janazah"* for the funeral and burial ritual. The inclusion of reporting features, managing the funeral process, messaging service to communicate with the committee, location tracking and learning tools upheld this app as a beneficial tool that can serve the community. The E-Easy Funeral application was evaluated in two types of testing to measure its usability and acceptability. Based on the findings, this study found that E-Easy Funeral is usable and was accepted by the users. It is also useful to assist the mosque committee in conducting the funeral arrangements faster more and smoothly compared to existing implementation. This app could solve the problem faced by the deceased family member to communicate and arrange the funeral effectively. As in Islam, the "*janazah"* must be managed within limited time frame for the burial process. In the future, this study may focus on the notification services as a reminder and virtual measurement of *"janazah"* to prepare a proper coffin size and other equipment.

ACKNOWLEDGEMENTS

We would like to thank Universiti Teknologi MARA Perlis Branch for supporting this study. A special appreciation also goes to the committee of Masjid Al-Makmur, Langkap, Perak and all participants who were involved in this study.

FUNDING

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

AUTHORS' CONTRIBUTION

Nur Izzat Syazwan, A and Siti Zulaiha, A. both contributed equally to all stages of this research. Siti Zulaiha, A. took the lead in authoring the article and shaping the flow of the research. Nur Izzat Syazwan, A. developed the application and presented application explanations. Meanwhile, both authors conducted user testing and analyzed the results.

CONFLICT OF INTEREST DECLARATION

We certify that the article is the original work of the Authors and Co-Authors. The article has never been published before and is not being considered for publication elsewhere. This study/manuscript has not been submitted for publication, nor has it been published in its entirety or in part elsewhere. We attest that all Authors made substantial contributions to the work, validity, and legitimacy of the data, as well as its interpretation for submission to Jurnal Intelek.

REFERENCES

Akers, H. (2021, February 5). What is a mobile database?. EasyTechJunkie. Retrieved from https://www.easytechjunkie.com/what-is-a-mobile-database.html

Asyraf, M. (2015). Soal imam. majalah al-Ustaz digital. Retrieved from https://www.alustaz.com.my/article/soal-imam.

Baldikov, N. (2020, June 29). Best instant messaging apps for business (free and paid tools). BROSIX. Retrieved from https://www.brosix.com/blog/instant-messaging-apps/

Casteren, W. Van. (2017). The Waterfall Model and The Agile Methodologies: A Comparison By Project Characteristics-Short The Waterfall Model and Agile Methodologies. *Academic Competences in the Bachelor*, 10–13. https://doi.org/10.13140/RG.2.2.36825.72805

Cheney, S., & Thompson, E. (2018, May 2). The 2017–2022 app economy forecast: 6 billion devices, $157 billion in spend & more | App Annie Blog. App Annie. Retrieved from https://www.appannie.com/en/insights/market-data/app-annie-2017-2022-forecast/.

Daod, A. A. (2020). Funeral management system. UNISZA, 1–12. Retrieved from https://myfik.unisza.edu.my/www/fyp/fyp19sem2/report/047596.pdf

Davis, F. D. (1993). User acceptance of information technology: system characteristics, user perceptions and behavioral impacts, *International Journal ManMachine Studies*, 38, 475-487.

Gunter, B. (2019). Children and mobile phones: Adoption, use, impact and control. Emerald Publishing Limited.Retrievedfromhttps://books.google.com.my/books?id=mdmVDwAAQBAJ&printsec=frontcover&dq=gunter+mobile+phone&hl=en&sa=X&redir_esc=y#v=onepage&q&f=false

Hidayatullah, A., S, Kom, J., S, Kom & A. R. (2017). Perancangan aplikasi pembelajaran tata cara pengurusan jenazah berbasis android studi kasus Pondok Pesantren Al-Anwar Petanang Kumpeh. *Ilimiah Media Processor*, 9(1), 125–130. Retrieved from http://ejournal.stikom-db.ac.id/index.php/processor/article/view/63/63.

Irianto, A. (2017). Aplikasi tata cara penyelenggaraan jenazah berdasarkan syariat islam berbasis android. Informatika, 65–3. Retrieved from http://repositori.uin-alauddin.ac.id/id/eprint/6876.

Katan, M., Nasrijal, N. M. H., Man, N. C., & Noor, A. H. M. (2019). Certainty of death and early preparation: Intention to purchase Islamic pre-need funeral plan. *Science International*, 31(2), 225-228.

Kaufmann, K., & Peil, C. (2020). The mobile instant messaging interview (MIMI): Using WhatsApp to enhance self-reporting and explore media usage in situ. *Mobile Media & Communication*, 8(2), 229-246.

Khosrow, M. (2020). Encyclopedia of information science and technology, fourth edition, Research Gate. IGI Global. Retrieved from https://www.researchgate.net/publication/3465255_Encyclopedia_of_Information_Science_and_Technology_Fourth_Edition_Mehdi_Khosrow-Pour_Information_Resources_Management_Association_USA.

Lewis, J. R. (1995). IBM computer usability satisfaction questionnaires: psychometric evaluation and instructions for use. *International Journal of Human-Computer Interaction*, 7(1), 57-78.

Mroczkowska, A. (2021, April 28). What is a mobile app? | App Development Basics for Businesses. Droids on Roids. Retrieved from https://www.thedroidsonroids.com/blog/what-is-a-mobile-app-app-development-basics-for-businesses

Muhammad Hassan, S. S. (2019). Technology acceptance model (TAM) and dynamics of online purchase adaptability. *International Journal Recent Technology and Engineering*, 8, 390-402.

Mulyono, H. (2020, January 10). Perbedaan dua model liang kubur, lahad dan syaq. Akurat.Co. Retrieved from https://akurat.co/perbedaan-dua-model-liang-kubur-lahad-dan-syaq.

Noor, S. (2018). Panduan pengurusan jenazah dan pusara orang islam mengikut syarak (2nd ed.). Jabatan Mufti Negeri Pulau Pinang. Retrieved from http://mufti.penang.gov.my/index.php/2014-11-12-.

Nugraha, J. (2020, December 8). Tata cara mengurus jenazah dalam Islam, Umat Muslim Wajib Tahu Halaman 2. Merdeka.Com. Retrieved from https://www.merdeka.com/jateng/tata-cara-mengurus-jenazah-dalam-islam-umat-muslim-wajib-tahu-kln.html?page=2.

O'Dea, S. (2020, September 22). Forecast number of mobile users worldwide 2020–2024. Statista. Retrieved from https://www.statista.com/statistics/218984/number-of-global-mobile-users-since-2010/.

Salleh, M. Y., Rahimin, A. A. R., Faridah Y., Paiz H., and Mohd Zahirwan H. Z. A. Funeral management in the Malay world: Local knowledge and practices. *Journal of Application Environment Biologi Science*, 7(1S) (2017), 72-77.

Tankovska, H. (2021, June 28). Most popular global mobile messaging apps 2021. Statista. Retrieved from https://www.statista.com/statistics/258749/most-popular-global-mobile-messenger-apps/.

Trivette, H. (2021) Council post: 11 Ways Artificial Intelligence can improve an agency's workflow, Forbes. Forbes Magazine. Retrieved from https://www.forbes.com/sites/forbesagencycouncil/2021/04/02/11-ways-artificial-intelligence-can-improve-an-agencys-workflow/.

Vyas, I. (2021, January 18). Top 5 Advantages of using Firebase for Mobile App Development. Citrusbugtechnolabs. Retrieved from https://citrusbug.com/article/5-amazing-benefits-of-using-firebase-for-mobile-app-development

Widayani, K., Nurida, N., & Andri, S. (2019). Pengembangan Prototype Sistem Infomasi Makam berbasis Mobile untuk memudahkan Masyarakatan dalam proses. *Pemakam. Faktor Exacta*, 12(1), 28-39.

Yulianto, S.V., Setia, L.D. & Atmaja, A.P. (2021). The use of whatsapp gateway for automatic notification system. *Journal of Physics: Conference Series*, 1845(1), p. 012014. Retrieved from https://doi.org/10.1088/1742-6596/1845/1/012014.

Zaki, E. (2021) Exploitation of a technique in arranging an Islamic funeral. IEEE. Retrieved from https://ieeexplorer.ieee.org/*document*/9498224.