

# M-Ibadah: AN ANDROID APPLICATION TO ASSIST OLDER ADULT USERS IN PERFORMING ISLAMIC RELIGIOUS PRACTICES

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## Abstract

*Older adults are the generation that shows large number of increase in Malaysia by 2030. It is predicted that 15% of Malaysian population is an older adult. It becomes a national agenda to help this older generation to always remain independent and maintain their well-being. As Malaysia comprises of majority Muslim community, therefore, it is believed that spirituality plays an important role in shaping older adults well-being. The advancement of recent mobile application technology can provide a solution for this issue. M-Ibadah was developed to assist older adult users in performing daily Islamic religious activities by using mobile application. M-Ibadah consists of four main modules which are Himpunan Hadith, Kompas Qiblat, Himpunan Doa and Waktu Solat which was developed for an Android platform. M-Ibadah was specifically designed to fulfill needs of older adult users. Text resizing features, language simplicity, audio and video, use of colour and application design itself are among the elements that are being considered in the development of the application.*

*Keywords:* Mobile application, elderly, spirituality, techno-spiritual

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## 1 INTRODUCTION

In the past few years, a variety of Islamic religious applications has been developed by mobile developers to cater the needs of the Muslim community worldwide. These applications facilitate many Islamic religious rituals and practices such as Mobile Prayer Reminder to remind the user of the five prayers in a day; Mobile Quran for the reciters and as reference; Mobile Qiblah Compass which allows its users to synchronize the Qiblah by always facing Kaabah in the city of Mecca; and also Mobile Zikr Counter to prompt its users of how many times they have already recited the Zikr.

In Malaysia, older people population shows sharp increase in number by 2030 (Jabatan Perangkaan Malaysia, 2012). This scenario happens in almost all countries worldwide where in 2050, it is projected that 21% of people will be over 60 (Olphert & Damodaran, 2013). Age 60 years old and above is define as older people in Malaysia by Ministry of Women Family and Community Development, (2011). Mobile applications are being seen as having a significant role in equipping older people generations to be independent in life whereby reducing the so-called 'burden of care' (Olphert & Damodaran, 2013). Islamic mobile applications apparently can facilitate and assists older adults in performing their daily religious activity.

Currently, as can be seen from the Google Play application store, most applications on Islamic religious practices provide information for general category of users. Most mobile applications had not been designed with older adult users in mind and eventually make them avoiding the technology. Although older adults perceive to turn into spirituality as they aged; stated by scholars as 'gerotranscendence' (Tornstam, 1997), however there are no Islamic religious applications that are purposely designed to

tailor older adults' needs and interest. Therefore, this research aims to uncover the following questions:

1. How to consolidate a single application that covers few important Islamic Practices from the perspectives of older adults?
2. How the older adults' preferred elements discussed in previous study can be embedded in the deployment of M-Ibadah?

## 2 OLDER ADULT USERS AND MOBILE TECHNOLOGY

### 2.1 Older Adult Definition

In Malaysia, the definition of older people refers to individuals aged 60 years and over (Ministry of Women Family and Community Development, 2011) as adopted in the United Nations World Assembly on Ageing in Vienna (United Nations, 1982). According to United Nations projections (2009), Malaysia will achieve the status of 'old country' in 2030 when the population aged 60 years and above rise up to 15% of the total population. This means that Malaysia will become an 'old country' during the 14<sup>th</sup> Malaysia Plan.

### 2.2 Successful Ageing of Older Adults

The relations of spirituality and older adults have been investigated in quite a number of studies especially in the area of how spirituality can contribute towards the successful ageing of older people. In fact, few studies have recognized spirituality as one of the elements for successful ageing instead of physical, mental and social well-being (Crowther, Parker, Achenbaum, Larimore, & Koenig, 2002). Tornstam (1997), relates ageing with spirituality known as

Gerotranscendence (GT) Theory which claims that ageing is characterized by ‘a shift from a materialistic and rational view of the world to a more cosmic and transcendent one, normally accompanied by an increase in life satisfaction’.

Therefore, with the rapid development of Information and Communication Technology (ICT) especially the mobile technology industry, it is an urge to develop technology to support the functional independence to support aging-in-place of older adults (van Hoof, Kort, Rutten, & Duijnste, 2011). Spiritual mobile applications are seen as a tool which can contribute towards successful aging and independence of older adults (Lavretsky, 2010). In fact, there are lots of spiritual mobile apps in the market, especially for Muslims such as the mobile Quran, mobile Adhan/Prayer Reminder, Zikr Counter, Islamic Calendar, Qiblah Locator etc. However, innovation in mobile apps often ignored needs and limitation of older users (Bowling & Dieppe, 2005) that eventually unease older people from using new technology (Barnard, Bradley, Hodgson, & Lloyd, 2013). Therefore, there is an urge in developing spiritual mobile applications from the perspective of older people to ensure mobile app-acceptance among older people.

### 3 EXISTING ISLAMIC APPLICATIONS

Currently, there are many Islamic Mobile Apps equipped with different modules in the Google Play store. The purpose of the apps is to give guidance and assistance to Muslims in performing daily religious activities. Most of the existing apps were not developed purposely to serve a specific target of users for instance young people, older people and etc. in which the apps design and content is most probably for general users. Some of the applications and its unique features are being discussed as the following:

#### 3.1 MyJakim Application

MyJakim as in Figure 1 is an official app developed by the Department of Islamic Development Malaysia (JAKIM). The app consists of eight different modules such as *Info Solat*, *Kemusykilan Agama*, *Direktori Halal*, *Fatwa*, *Doa Harian*, *Logo Halal Diiktiraf*, *Khutbah Jumaat* and *Yasin & Tahlil*. Malay language is the medium of the app. The Doa modules in this app provide users with video to show the correct pronunciation in the reciting of the Doa together with its translation in Malay Language as in Figure 1. This app has been downloaded by 50000 to 100000 users.



FIGURE 1. The Doa Module in MyJakim (left) and Muslim Pro Main Page (right)

#### 3.2 Muslim Pro Application

Muslim Pro as in Figure 1 is among the popular Muslim app in an Android platform. This app has been downloaded by more than 10 million users. It contains nine modules which are Prayers, Qibla, Quran, Holidays, Names, Places, Cards, Help and Settings. English is the language used in this app and the prayer times (according to the user's location) was being displayed on its main page. The Quran modules are embedded in the app whereby the user can essentially recite the Quran with just a single click.

### 4 DEVELOPMENT OF M-Ibadah

The development of M-Ibadah application was tailored to Mobile Development Life Cycle (MDLC) which involves five main phases as depicted in Figure 2.

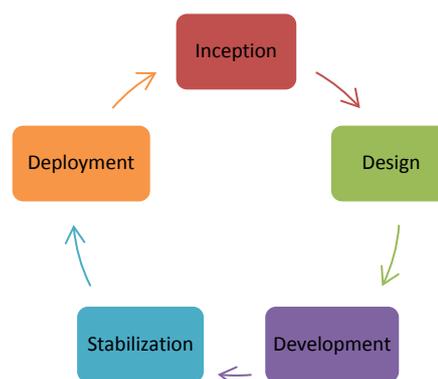


FIGURE 2: Mobile Application Development Life Cycle

#### 4.1 Inception

Basically, every app starts with an idea and later reform into a solid basis for an application development. The idea to develop an app for older people comes after several visits to older people centers. In terms of competitive advantage, as far as the researcher's survey, as to date there is no similar application which attempts to accommodate older people's need. Even though there are a number of Islamic applications in an Android market, however, there are no single app which offers the silver generation some friendly features for instance, text resizing function, big fonts, large videos and simple interface.

#### 4.2 Design

The app's design considers the input gathered from an interview session with fifteen older adults from Kompleks Warga Emas Seksyen 24, Shah Alam. Results from the interview (Ahmad, Zainal, Kahar, Hassan, & Setik, 2016) identifies few important elements needed by older adults in their app such as simplicity, language use, text resizing functions, colour, mobility and also usage of multimedia elements. The older adults also requested an Islamic app that can act as their *ibadah* kit by combining several priority Islamic modules into only one application rather than one application for one module. Therefore, the M-Ibadah application contains four Islamic modules which are among

high ranking apps in previous studies (Ahmad et al., 2016) including *Hadith 40*, *Waktu Solat*, *Himpunan Doa* and *Kompas Qiblat*.

### 4.3 Development

The development of the M-Ibadah application on Android platform was done by using Brackets, Cordova and easy PHP development tools. The M-Ibadah consists of the four older adult requested modules which are *Himpunan Hadith*, *Kompas Qiblat*, *Himpunan Doa* and *Waktu Solat*. The following Figure 3 shows the main page of the app.

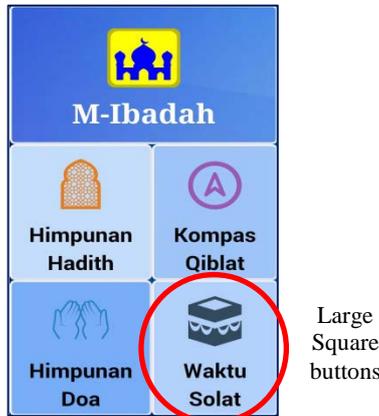


FIGURE 3. M-Ibadah Main Page

The main page has four big button icons for four different modules integrated in the app. The app was developed by considering the simplicity concept, language selection and font size elements in the developer's mind. Malay language is used for the content and design in this app because majority of the older adults feel comfortable with their native language. The title for each icon is designed to be a bit bigger and the large square buttons style is used to standardized the menu. Older adults in Kurniawan (2006) study stated that older adults preferred large square types of buttons for their mobile phones. Next, colored icon was used to attract older adults' interest in using the app.



FIGURE 4. Hadith Module

The first module in the app is *Himpunan Hadith* as depicted in the above Figure 4. *Hadith* was defined as collections of Prophet Muhammad PBUH word, attitude, resolution or approval which became law in Islam. In this module, font

resizing button (small, medium and large) is provided to allow older adult users reading Hadith at their own ease. Majority of older adult users faced problems in long sighted and short sighted as they are getting older. Therefore, font resizing function is important as one of the senior-friendly elements in designing an application's.



FIGURE 5. Waktu Solat Module

The second module in the app as in Figure 5 is *Waktu Solat* (Prayer Time). This module provides prayer time in a day basis consists of the five basic Muslim daily prayer times which are *Subuh*, *Zohor*, *Asar*, *Maghrib* and *Isyak*. Besides that, there is also time for *Imsak* and *Syuruk* for Muslim's additional reference. In this module, users are allowed to choose their accurate location based on district to ensure the accuracy of prayer time. At the same time, the Islamic date is also displayed on the screen for older people's reference.



FIGURE 6. Himpunan Doa Module

The third module as in Figure 6 is *Himpunan Doa*. This module provides the collection of *Doa* in Malay translation. An Arabic translation and also video taken from *Youtube* was provided for each of the *Doa* recitation to guide older adult users in terms of the correct *Doa* pronunciation. Additionally, the size of the video can be increased to full screen for better resolution.



FIGURE 7. Kompas Qiblat Module

The last module as in Figure 7 is *Kompas Qiblat*. *Kompas Qiblat* is used to determine the direction of *Qiblat* in Mecca in order to perform the daily prayer. The compass will automatically show the *Qiblat* direction towards Mecca based on user's current location upon opening the module.

#### 4.4 Stabilization

Next phase after development is the stabilization. Stabilization is the process of finding the bugs in the app and fixing it. In this phase, the researchers not only focus on the functionality aspect, but also focus on the usability and performance aspects. Therefore, all constructive comments are taken into developer's consideration for app's improvement. The improved version is to help boost the processing performance and speed up the app upon loading each module. Currently, the enhancement of the M-Ibadah through its second version is still being developed and in ongoing process since there are certain feedbacks from users about the application's interface and content that need to be taken into consideration.

#### 4.5 Deployment

The final phase in MDLC is deployment of the mobile app in an Android platform. There are certain steps that should be completed before the app can be published. Firstly, the developer needs to have an account to allow the app to be registered in Google Play. Developers should enter basic information about the app and prepare the final version of the app with .apk format. Secondly, pay the registration payment to Google payments and once the registration is already verified, the developer will be notified through an email account. Thirdly, the developer can upload the application file by using the Google Play Developer Console and the application is finally available in Google Play Store as in Figure 8.

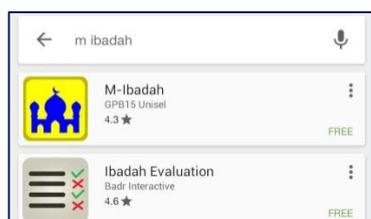


FIGURE 8. M-Ibadah App in Google Play Store

## 5 CONCLUSIONS

The increasing number of older people population worldwide especially in Malaysia makes it essential that older people remain independent and maintain their well-being in their old age. Spiritual mobile application undertakes to assist older people in fulfilling their spirituality practices such as reminder for daily prayer times, giving guidance on doa and hadith compilations and also tools for locating qiblat at ease. The development of M-Ibadah Application is believed to provide significant contribution for Muslim older adult users since the designing part of the app considers older adults requirements starting from the initial stage. Older adult users' requirement which was gathered from previous study is used as a guidance and principal of m-Ibadah application. Also, this research provides an insight about older adult's challenges and difficulties in using mobile apps. The researchers especially from Human Computer Interaction field are urge to further study on ways to improve mobile applications design and interfaces to tailor older people's needs and desire.

Currently, the M-Ibadah is only available on Android platform and in the near future, we plan to deploy this application on iOS platform as well, so it could benefit older adult users to carry out Islamic practices by the assistance of ubiquitous mobile technology.

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