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The Android Application "Haji Pintar" And Independent Pilgrimage

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Abstract: This article aims to find out the usability of the "Haji Pintar" Android application, Directorate General of PHU, Ministry of Religion, for the independence of Semarang City Hajj Pilgrims and to find out the factors that influence the low use of the Haji Pintar" application among Semarang City Hajj pilgrims. To achieve the objectives of this article, an exploratory study was used. The survey results showed a positive response to the usefulness of the application for Hajj independence for those who have performed the Hajj pilgrimage. Meanwhile, the factor that influences the low use of Haji Pintar applications is that the majority of Hajj pilgrims are elderly who have difficulty using devices.

Keywords: haji pintar; independent hajj; android application usability

Abstrak: Artikel ini bertujuan mengetahui kegunaan (*usability*) aplikasi android "Haji Pintar" Ditjen PHU Kementrian Agama bagi kemandirian jamaah haji Kota Semarang dan mengetahui faktor-faktor yang mempengaruhi rendahnya penggunaan aplikasi "Haji Pintar" di kalangan jamaah haji kota Semarang. Untuk mencapai tujuan tersebut, artikel ini menggunakan studi eksploratif. Hasil survei menunjukkan respon positif atas kegunaan aplikasi terhadap kemandirian haji bagi yang pernah melaksanakan ibadah haji. Sedangkan faktor yang mempengaruhi rendahnya penggunaan aplikasi haji pintar adalah mayoritas jamaah haji merupakan lansia yang kesulitan dalam menggunakan gawai

Kata Kunci: haji pintar; kemandirian jamaah haji; kegunaan aplikasi android

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Introduction

Changes in some people's lifestyle patterns, such as ways of communication, commerce, transactions and work, including organizations or institutions, are caused by advances in information technology (Xia et al., 2023). Romney & Steinbart (2017) stated that the use of information technology in organizations also functions as an information service, the media used is not only television and radio, but also the internet to convey information both public and private. Information services by the government via the internet are not only dominated by personal computers (PCs), but are also starting to spread to the realm of Android devices (Omolara et al., 2022).

The Hajj pilgrimage, which is held every year in the city of Makkah, Saudi Arabia, cannot be separated from various problems that accompany it (Alshaibi, 2024; binti Maslan et al., 2024; Paché, 2023). The worship problems were encountered starting from registration, BPIH determination, coaching, accommodation services, health, transportation, protection of Hajj pilgrims, catering, Hajj organizing institutions, organizing committees, and Hajj officers (Alfian & Rafianti, 2023; Aljawi, 2024; Harahap et al., 2023).

As in the mandate of Law no. 8 of 2019 that the Directorate General of Hajj and Umrah Organizations (Ditjen PHU) of the Ministry of Religion of the Republic of Indonesia, one of its duties is to provide services for Indonesian Hajj Pilgrims. Slama (2023) and Halim (2021)explicitly stated that the implementation of the Hajj pilgrimage is a public service. Therefore, the implementation of the Hajj pilgrimage as a public service according to Widodo (2001) is at least seen from 10 dimensions "(1) physically real, namely fulfilling the dimensions of physical equipment, communication and personnel. (2) reliable, able to provide excellent service; (3) responsible, responsible for the quality of work and services; (4) competence, having good knowledge and skills; (5) Polite, friendly in dealing with consumers; (6) credible, can be trusted by the public; (7) security, able to provide a sense of security from danger and risk; (8) access, providing easy access to the community; (9) communication, opening space to communicate with the community to express aspirations or desires. (10) understand society, know the needs of consumers or society.

Many Hajj and Umrah applications have been published on the google play store to make it easier for Hajj and Umrah pilgrims to carry out worship (Niu, 2023; Rouf et al., 2023; Shambour & Gutub, 2023). One form of service provided by the Directorate General of PHU of the Ministry of Religion to Hajj pilgrims is providing information via the Android device application "Haji Pintar". The Android device application " Haji Pintar " provides information regarding estimated departures, accommodation, food, transportation, congregation services, video tutorials, weather, hajipedia, Hajj information, flight schedules and even complaints. This application has been installed more than 10,000 times. To install it requires Android application version 5.0 and above. As of August 15 2019, this application has been reviewed by 134 users, cumulatively receiving 3.9 stars on a 1 to 5 star scale.

The number of users who have installed the " Haji Pintar" application is around ten thousand, which is not directly proportional to the number of Hajj pilgrim quotas in 2019 of around 204 thousand pilgrims. Thus, only around 4.9% of all Hajj pilgrims have installed the application. Even though this application has been launched since 2015. It is very ironic that in the era of digital information, the use of digital Hajj information is very low among Hajj pilgrims. This fact makes it interesting to discuss the usability of the "*Haji Pintar*" Android application for Semarang City Hajj pilgrims in 2019. Usability is defined as a product that can be used and satisfy users effectively and efficiently (Castro et al., 2023; Hu et al., 2024). The choice of Semarang City was motivated by the fact that the 2019 Hajj pilgrimage in Semarang

City, numbering 1,932 pilgrims, was the largest in Central Java. This article is important as a study of the "*Haji Pintar*" application published by the Ministry of Religion of the Republic of Indonesia

The primary goal of this research is to assess the usability of the "Haji Pintar" Android application, specifically focusing on how well it supports independent Hajj pilgrims in performing their religious duties. his research will adopt a mixed-methods approach, combining both quantitative and qualitative data to gain a comprehensive understanding of the app's usability. A System Usability Scale (SUS) questionnaire will be administered to all participants at the end of the usability testing. Semi-structured interviews will be conducted with a subset of participants (5–10) to gain deeper insights into their experiences. Participants were members of seven Hajj Guidance Groups (KBIH) in the city of Semarang

Results and Discussion

This article focuses on the usefulness of the "*Haji Pintar*" application for Semarang city Hajj pilgrims in 2019. The 2019 Semarang city Hajj pilgrimage of 1,932 pilgrims was the largest in Central Java. 72% are elderly. So the age of non-elderly Hajj pilgrims is 28% of the 1,932 pilgrims, approximately 541 Hajj pilgrims are of productive age.

This research does not focus on elderly Hajj pilgrims, as Anindita believes, that elderly people experience technical difficulties in using Android smartphones (Farman et al., 2023; Polnigongit et al., 2023; Ramdowar et al., 2023), because they have experienced a decline in various body functions (Anindita, 2017). Anindita's opinion is also in accordance with the statement of one of the 2019 Semarang city hajj pilgrims who stated thus:

> “Aplikasi ini hanya dapat digunakan oleh jamaah yang melek huruf dan teknologi, sedangkan jamaah Indonesia mayoritas adalah lansia yang bahkan tidak melek huruf dan tidak melek teknologi, sehingga aplikasi ini kurang tepat bagi karakteristik jamaah yang tidak melek huruf dan tidak melek teknologi.”
>
> "This application can only be used by pilgrims who are literate and technologically literate, while the majority of Indonesian congregations are elderly who are not even literate or technologically literate, so this application is not appropriate for the characteristics of congregations who are not literate and not technologically literate.”

According to researchers, the majority of Hajj pilgrims are elderly, which is the dominant factor and also the answer to why the "*Haji Pintar*" application in 2019 was only downloaded around 10,000 times even though the number of national Hajj pilgrims in 2019 was 204 thousand pilgrims. This research prefers to focus on the 2019 Hajj pilgrims in the city of Semarang who are of productive age, 28% of the total number.

The data source in this research is in Semarang City with the target respondents being Hajj pilgrims in Semarang City in 2019. The population of Hajj pilgrims in the city of Semarang is 1,932, most of whom are spread across 15 (fifteen) groups of Hajj Guidance (KBIH) in the city of Semarang, namely: (1) Al Chumaidiyyah, (2) Wahid Hasyim, (3) Nahdhotul Ulama, (4) Nurul Qolbi, (5) Baiturrahman, (6) As Shodiqiyyah, (7) Muhammadiyah, (8) Multazam, (9) Al Muna, (10) Nurul Huda, (11) Sirothol Mustaqim, (12) Al Hidna, (13) Arafah, (14) Ar-Raudloh, and (15) Az-Zuhri.

The 2019 Semarang city hajj pilgrimage of 1,932 pilgrims was the largest in Central Java. 72% are elderly. So the Hajj pilgrims who are of productive age are 28% of the 1,932 pilgrims or approximately 541 pilgrims. As with Arikunto, the sample can be taken at 10%. The

researcher took a sample of 10% of 541 Hajj pilgrims in the city of Semarang totaling 54 people from the population where data was extracted accompanied by interviews.

Usability

New patterns of behavior emerge based on the intensity of the information channels that surround us. Various application platforms have emerged along with gadgets, such as Facebook and Twitter applications, which have replaced traditional websites (Nah & Saxton, 2013), and consumers prefer to share their thoughts and experiences via mobile apps rather than websites (Yan et al., 2016). There is more than one application for every incident in our life (Xu et al., 2016) and mobile apps have surpassed the role of websites in sales (Liu et al., 2017). Beyond the facts, statistical evidence reinforces the paradigm shift. About forty percent of the world's population are active gadget users (Statista, 2018), mobile platforms outperform top online destinations (Hodis et al., 2015), five of the twelve most visited websites on the Internet are mobile platforms (Alexa, 2018), and ninety percent of time spent on smartphones (Alliance, 2017), reveals how important gadget applications are in users' daily lives. The usability level of each platform influences and determines its use. Usability is the ease of use and learnability of a man-made object such as a tool or device (Chow et al., 2014). Usability has emerged as a key domain in information systems and efforts have developed to understand the influence of several characteristics that influence technology usability and design. Technology refers to the stability and performance of information systems, while design creates an environment that allows users to interact positively with information systems (Koehler & Mishra, 2005). User frustration increases when usability principles are absent. The most important factor influencing consumers' decisions to reject information systems is the lack of usefulness of the technology.

Principles that enhance usability have influenced users in different directions when switching to Internet access (Kortum & Bangor, 2013). Social media and mobile applications are information systems that users tend to use to find relevant information about products and services, and are used as business cards and points of contact in cyberspace. (Huang & Benyoucef, 2015). From this point of view, it is possible to conclude that usability is a key concept that influences users, and the achievement of higher efficiency, efficacy and satisfaction from social media and causes identified behavioral changes, which reveal the tendency of users to choose this platform over others for find relevant information.

Mobile applications have been used to access shops, search for places (e.g. TripAdvisor, Foursquare), news (e.g. BBC News, Facebook), search for product ratings (e.g. Amazon), search for answers, questions or advice (e.g. Quora), educational content (e.g. Wikipedia), listening to music (e.g. Spotify), watching videos (e.g. YouTube), sharing photos (e.g. Instagram), following interests (e.g. Pinterest, Tumblr), finding friends (e.g. Facebook), chatting with friends (e.g. Twitter, WhatsApp), professional goals (e.g. LinkedIn), among other interests. The usability of mobile applications has identified a considerable context that has been the subject of analysis, such as the impact of usability on social media to increase purchase intent. (Shang et al., 2017), word of mouth and loyalty (Risius & Beck, 2015)

The term usability was coined about 10 years ago to replace the term "user friendly" which by the early 1980s had acquired a number of vague and subjective connotations. However, in subsequent years, the word usability itself has been almost as devalued as the term it was intended to replace. There are still many different approaches to making a product usable, and there is no accepted definition of the term usability. The definitions that have been used derive from a number of views about what use is. Usability can be evaluated from three distinct

perspectives. The first is the product-oriented view, which assesses usability based on the ergonomic attributes of the product itself. The second is the user-oriented view, which focuses on the user's mental effort and attitudes while interacting with the product. Lastly, the user performance view examines usability by analyzing how users interact with the product, with particular emphasis on its ease of use—how simple and intuitive the product is to operate—and its acceptance, which refers to whether the product is likely to be adopted in real-world scenarios.

These views are complemented by a contextually oriented view, namely that the usability of a product is a function of the particular user or class of users studied, the tasks they perform, and the environment in which they work.

Usability is a factor in whether an application is considered good or bad. According to Nielsen (2012) "usability is a method of assessing the ease of an application when used. Proper design between windows makes it easier for users to interact with devices (Jiménez et al., 2012). On the other hand, usability can map user satisfaction or disappointment with an application." There are 3 instruments to measure usability, namely "effectiveness, efficiency and satisfaction" (ISO, 1998). These parameters according to ISO 9241-11 include, among others:

Effective and Efficient

“Accuracy and completeness, the user's accuracy in achieving a certain goal and being able to complete the task. This criterion is measured based on the number of errors that occur when users use the application (Eswararaj, 2023)."

“Effort or power exerted by users to achieve certain goals. Usually this criterion is measured based on units of time (Fu et al., 2023).”

Satisfaction

“Satisfaction is freedom from discomfort and positive behavior from a product (Llana et al., 2023).” The "Haji Pintar" android application information system of the Directorate General of PHU of the Ministry of Religion as a means of information has been installed by around ten thousand users. In its use, it is necessary to develop a good service culture, with a service culture that seeks to minimize errors so that all stakeholder goals are achieved, usability is important so that it can be used by Semarang city Hajj pilgrims.

In this research, it is deemed necessary to find out the views or perceptions of the 2019 Hajj pilgrims regarding the usefulness of the application “Haji Pintar Tahun 2019” towards the independence of Hajj pilgrims. This data will help in improving the “Haji Pintar” application so that it is more useful or helpful in making Hajj pilgrims independent in carrying out the Hajj pilgrimage.

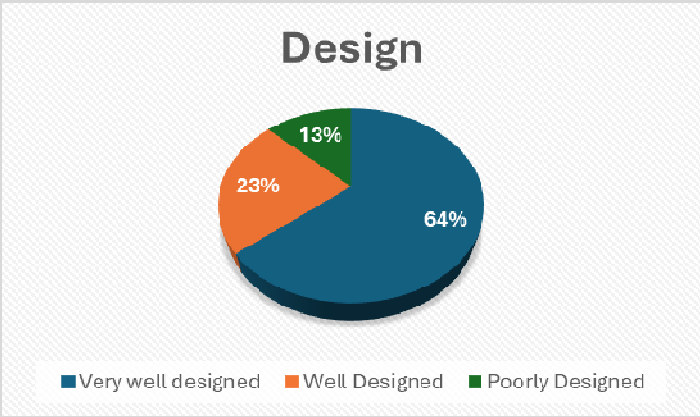
As has been stated, to see the usefulness of a device application, according to Hoehle & Venkatesh (2015) there are 6 aspects that must be looked at, namely: (1) Application Design, (2) Application Utility, (3) User Interface Graphics, (4) User Interface Input, (5) User Interface Output, (6) User Interface structure.

Applicaton Design

Application design is a flow model of an application that can work statically or dynamically and can be used by users (Yüksel et al., 2023; Aridor & Lange, 1998). Is an application designed

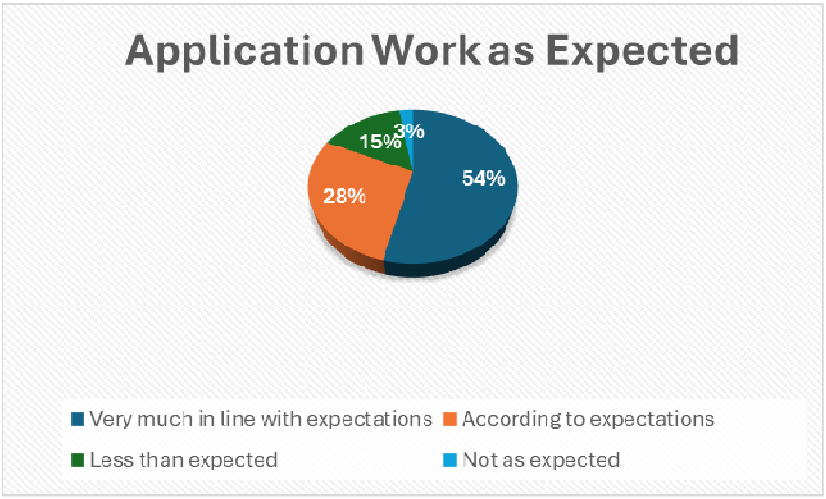
(designed) well for the benefit of Indonesian Hajj pilgrims? If seen from the perspective of Hajj pilgrims, the design of the "*Haji Pintar*" application can be seen in the table below.

Table 1: Hajj application well designed



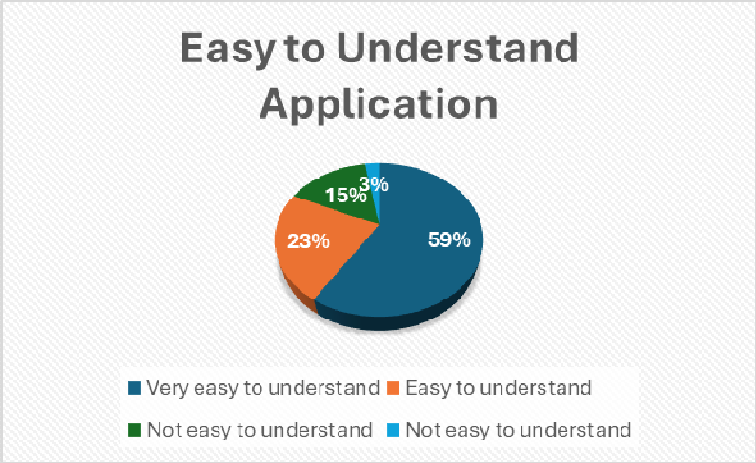
From the table above it can be seen that 64.1% of productive age Hajj pilgrims said that *aplikasi haji pintar* very well designed, while 23.1% said it was well designed, 12.8% said it was not well designed while 0% said it was not well designed. This shows that the majority of Hajj pilgrims respond very well to the existence of the application “Haji Pintar”.

Opinions of productive Hajj pilgrims, regarding the "Haji Pintar" application, can work according to the expectations of Hajj pilgrims, as in the following table:



From the table above, although 2.6% think that the application does not work according to the Hajj pilgrims' expectations and 15.4% of the application works less than expected, 28.2% say it meets expectations and 53.8% think it meets expectations. This shows that the majority of Hajj pilgrims of productive age still think that the *Haji Pintar* application can work as expected.

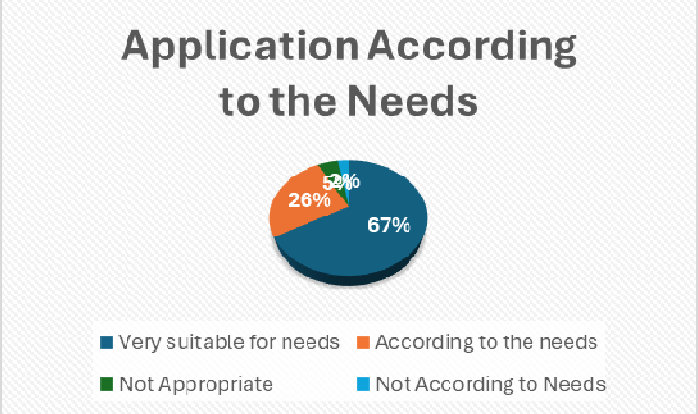
The opinions of urban productive age Hajj pilgrims regarding the *Haji Pintar* application are easy to understand, as in the following table:



The results of this table show that the application works as expected according to the level of ease of understanding the application.

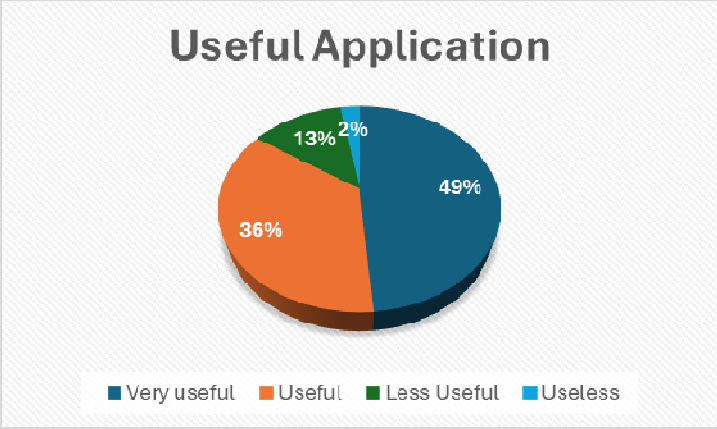
Application Utility

If we look at the needs of Hajj pilgrims for *Haji Pintar* applications, it can be seen in the following table:



The table shows that 66.7% of Hajj pilgrims of productive age stated that the Haji Pintar application was very suitable for the needs of Hajj pilgrims, while 25.6% thought it was suitable for their needs, whereas only 5.1% thought that it was not suitable for their needs, there were even 2.6% who said it was not suitable with the needs of Hajj pilgrims.

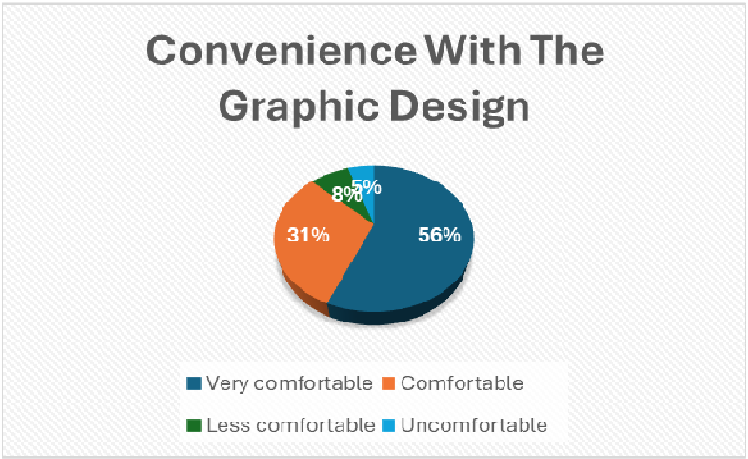
After conducting an in-depth study of the respondents, it was found that Hajj pilgrims who thought that the Haji Pintar application met their needs indicated that they felt helped by the features of flight schedules, Hajj rituals, accommodation, tutorials and rupiah exchange rates.



From the table above, although 2.6% think that the application is not useful for Hajj pilgrims and 12.8% of the application is less useful, 35.9% say it is useful and 48.7% think it is very useful for Hajj pilgrims. This shows that the majority of Hajj pilgrims of productive age still think that the *Haji Pintar* application is very useful for Hajj pilgrims.

User Interface Graphics

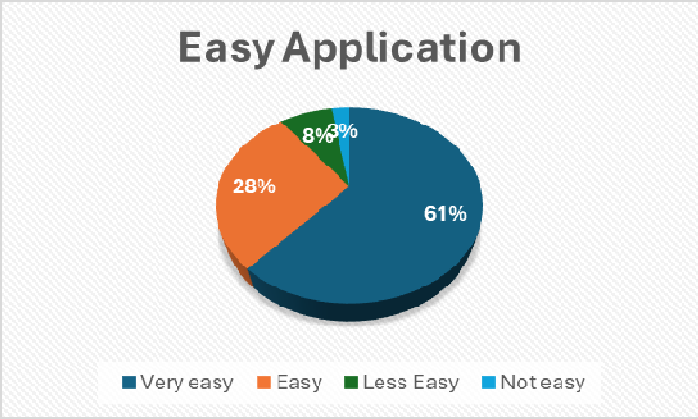
User interface graphic refers to the comfort experienced by users or Hajj pilgrims from Semarang City when interacting with the graphic design of the *Haji Pintar* application. This aspect emphasizes how the visual elements and layout of the interface contribute to the overall usability and satisfaction of the application, ensuring it meets the needs and expectations of its users effectively.



The table shows that 56.4% of productive age Hajj pilgrims said they were comfortable when interacting with the graphic design of the Haji Pintar application, while 30.8% thought they were comfortable, whereas only 7.7% thought they were less comfortable, and there were even 5.1% who said Hajj was uncomfortable. However, according to researchers, the convenience factor is not only from the aspect of the Haji Pintar application, but the device or type of smart phone also influences comfort in interacting with smartphone applications.

User Interface Input

Ease of Hajj pilgrims in running the Haji Pintar application as in the table below:

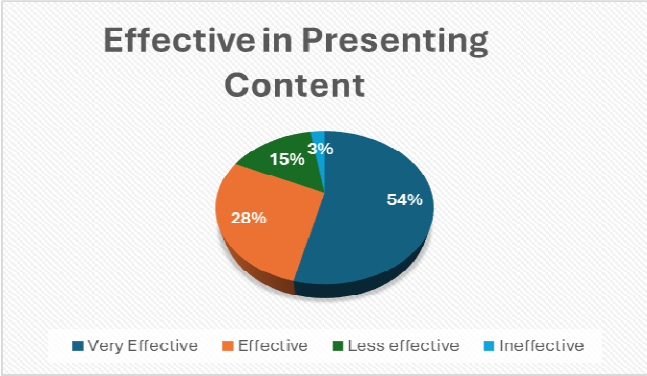


The table shows that as many as 61.5% of Hajj pilgrims think it is very easy to operate the Haji Pintar application, while 28.2% think it is easy, conversely 7.7% think it is not easy and 2.6% think it is not easy. This is in accordance with one of the statements made by the Hajj pilgrims as follows:

> "Bahasa aplikasi nya seserhana dan mudah dipahami semua kalangan. Petunjuknya pun tidak melalui banyak langkah cukup tekan satu atau dua langkah cukup."
>
> "The application language is simple and easy for everyone to understand. The instructions don't involve many steps, just pressing one or two steps is enough"

User Interface Output

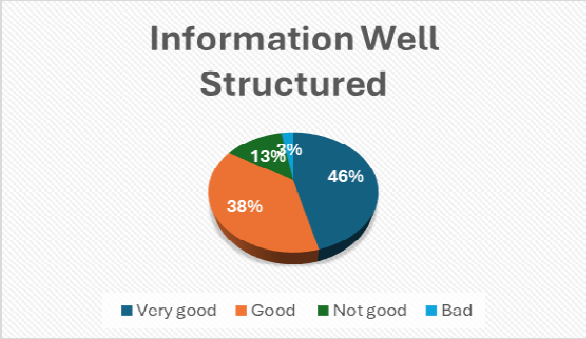
User interface output discusses the effectiveness of content presentation. The views of Hajj pilgrims regarding the effectiveness of presenting content in the Haji Pintar application are listed in the table below:



According to the table, although 2.6% of Hajj pilgrims think the Hajj application is not effective in presenting content, 15.4% think it is less effective, 28.2% think it is effective and 53.8% think it is very effective. This shows that the majority of Hajj pilgrims of productive age think that the Haji Pintar application is effective in presenting content.

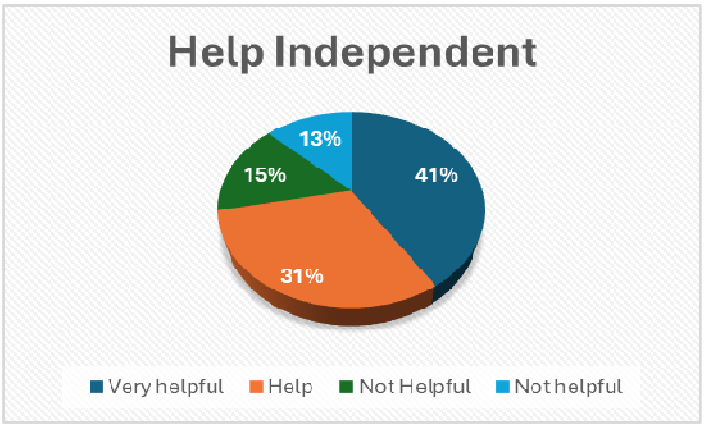
User Interface structure

According to Hajj pilgrims, whether the information structure arranged in the Hajj application is good or not is as follows:



From this table, it shows that according to Semarang city Hajj pilgrims with a productive age, the Haji Pintar application information is organized very well 43.7%, 35.9% good, 12.8% poor, 2.6% not good

From the results of a survey of Hajj pilgrims which contains several Haji Pintar usability (usability) instruments (1) Application Design, (2) Application Utility, (3) User Interface Graphics, (4) User Interface Input, (5) User Interface Output, (6) User Interface structure shows that the majority gave a positive response. However, when answering questions about the *Haji Pintar* application, it helps the Hajj pilgrims become independent, without assistance *Kelompok Bimbingan Ibadah Haji dan Umrah* (KBIHU), then the results are as in the table below:



The table shows that 41% of the congregation felt very helped by the Haji Pintar application to be independent in KBIHU, 30.8% felt helped, 15.4% felt it was not very helpful and 12.8% felt it was not helpful. Many Hajj pilgrims feel helped by this *Haji Pintar* application because they have completed the Hajj pilgrimage.

However, when asked what things in the *Haji Pintar* application make Hajj pilgrims feel helped to become Hajj pilgrims without KBIHU. Some answered that they felt helped by the transportation features, accommodation, and guidance on the Hajj pilgrimage. Some even gave

the following answer: "that for the first Hajj/Umrah you still need a companion from KBIHU even though there is this application".

Factors for the low use of the "Haji Pintar" application among Semarang City Hajj pilgrims

The reason for the low use of *Haji Pintar* applications among Semarang city Hajj pilgrims in 2019 is because 72% of them are elderly Hajj pilgrims. As per Anindita's research (2017) that the elderly experience technical difficulties in running Android smartphones because they have experienced a decline in various body functions. An alternative that can be taken for the elderly is to provide the *Haji Pintar* application specifically for the elderly, although its effectiveness in use needs to be reviewed.

In order to explore the causes of the low use of the *Haji Pintar* application among Hajj pilgrims in 2019, it can also be represented by the results of interviews with Hajj pilgrims when asked what recommendations for improving the *Haji Pintar* application? There was a mother of a Hajj pilgrim in the city of Semarang in 2019 who said that

“So that this application can be shared more so that more people know”.

This statement also shows us that not all Hajj pilgrims of productive age are aware of the existence of the "Haji Pintar" application. This is because the Directorate General of PHU of the Ministry of Religion, when providing guidance on Hajj rituals, did not introduce the *Haji Pintar* application on a massive scale to the congregation. KBIHU as a partner of the Directorate General of PHU in accompanying Hajj pilgrims, is also not involved in socializing the existence of the application, as well as providing tutorials on using the Haji Pintar application.

Apart from that, the Haji Pintar application, which was first launched in 2018, has undergone improvements and created a new version specifically for Hajj pilgrims in 2019. Likewise, in 2020, the Ministry of Religion also seems to be launching the latest version for Hajj pilgrims in 2020. It seems that the application "Smart Haji" 2018 cannot automatically update with the latest features, nor can the Smart Haji application automatically update the 2020 *Haji Pintar* application. So, on one device/smartphone you can install 3 "Smart Haji" applications from 2008, 2009 and 2020. This is also one of the reasons why *Haji Pintar* application downloads always expire when the release year has ended. This seems to require Hajj pilgrims to download the application once a year, to update the application.

Conclusion

Survey results to Hajj pilgrims which contain several *Haji Pintar* usability instruments (1) Application Design, (2) Application Utility, (3) User Interface Graphics, (4) User Interface Input, (5) User Interface Output, (6) User Interface structure shows that the majority gave a positive response. Likewise, the response regarding the independence of Hajj pilgrims without KBIHU using the *Haji Pintar* application shows a positive response with a note, for those who have performed the Hajj before.

Factors causing the low use of *Haji Pintar* applications for Semarang city Hajj pilgrims in 2019, because 72% of Hajj pilgrims are elderly (elderly) who have difficulty using devices due to a decline in various body functions. Apart from that, the lack of socialization is also the cause of the low use of this *Haji Pintar* application. Meanwhile, the technical problem that must be fixed is the system update which should not create a new application, but rather replace the old system with a new system.

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