The Influence of Brand Image on Customer Experience and Actual Usage of Digital Health Applications: Case Study of Halodoc, Alodokter, and Klikdokter in Jakarta, Indonesia

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ABSTRACT

Indonesia is a rapidly digitizing country with over 270 million population in 2022 and more than 202.6 million internet users. Thus, the digital health industry is believed to be the next wave of digital disruption, with an expected growth rate of over 60% annually, with revenues will reach $973 million by 2023 from $85 million in 2017. Nevertheless, the penetration of digital health applications is still relatively low. Halodoc, a market leader in digital health applications in Indonesia, only penetrated 8.9% of users in 2022. Brand image is one indicator that influences the customer experience using these applications. However, research to investigate the influence of brand image on the customer experience and thus lead to the actual usage of digital health applications is relatively limited. Hence, this paper proposed an alternative framework to fill the gap by employing the extension of the Technology Acceptance Model (TAM) approach. Brand image is believed to be able to influence the customer experience and the actual use of digital health applications. The limitation of this paper lies in the lack of empirical data. This paper is conceptual, and future research should be done empirically.

Keywords: Digital health applications, technology acceptance model, customer experience, actual use of digital health applications, brand image

BACKGROUND

The COVID-19 pandemic has changed the landscape of global healthcare systems delivery. Attention has turned to digital health or virtual care delivery to encourage the physical and social distancing that the government imposed during the pandemic, but still able to offer potential health solutions in this period of unprecedented medical crisis to mitigate the impact of this pandemic. In 2018, there were 318.000 health applications accessible worldwide on Google Play and the Apple App Store, with over 200 new ones being published every day (Asialink Business, 2020).

Research by McKinsey indicates that telemedicine, followed by e-pharmacies, will be the main driver of development within the sector, with the consumer digital health market in Asia expected to increase from US$37.4 billion in 2020 to over US$100 billion in 2025 (ASEAN Business Partners, 2022). The major ASEAN countries, including Indonesia, Malaysia, the Philippines, Thailand, Singapore, and Vietnam, experienced massive growth in virtual health solutions between 2020 and 2021. The ratio of website visits and downloads per country's population with each country's most popular digital health applications is illustrated in Figure 1 below.
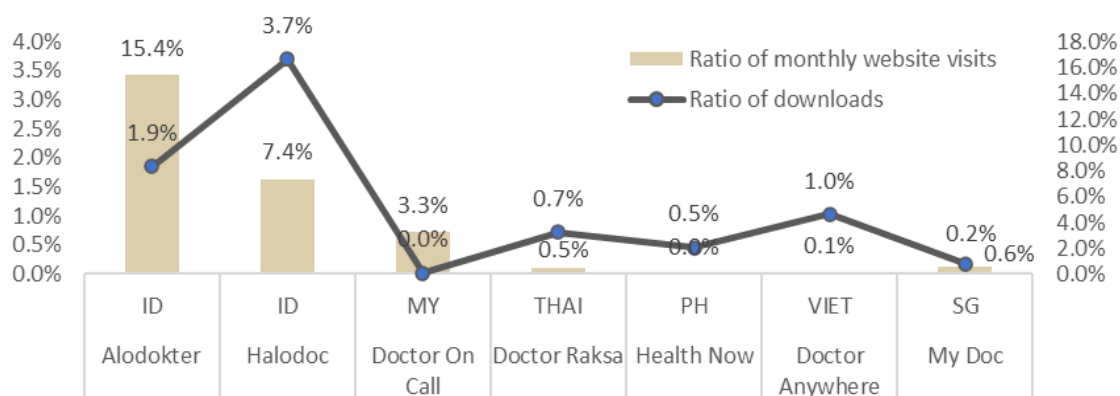

Figure 1. SEA Digitial Health Services Ratio of Monthly Visits & Downloads

Source: ASEAN Business Partners, 2022

Nevertheless, Indonesia is a rapidly digitizing country with over 270 million population in 2022 and more than 202.6 million internet users (Global Digital Insights, 2022). According to Frost & Sulllivan (2018), the digital health industry growth rate is expected to reach over 60% annually (CAGR), with revenues will reach $973 million by 2023 from $85 million in 2017 (Frost & Sullivan, 2018). The rise of four sucessful tech unicorns in Indonesia and the impact of digital disruption have given the Indonesian government hope for the next unicorn to emerge. The Indonesian government is driving investment interest in digital health as the following wave of digital disruption in Indonesia after ride-sharing with GoJek, e-commerce with Shopee and Bukalapak, travel with Traveloka, and fintech with OVO (Asialink Business, 2020).

Based on a survey on digital health applications conducted in Indonesia in 2021 with 4.781 participants, 71% of respondents selected Halodoc as their preferred digital health application, followed by Alodokter with 56%, and Klikdokter with 30% (Statista, 2022), as shown in figure

2 below. Additionally, according to another research on Halodoc, the number of downloads has increased by double to 18 million monthly active users (Manurung et al., 2022). As a result, Halodoc, Alodokter, and Klikdokter are the top three digital health applications in Indonesia.
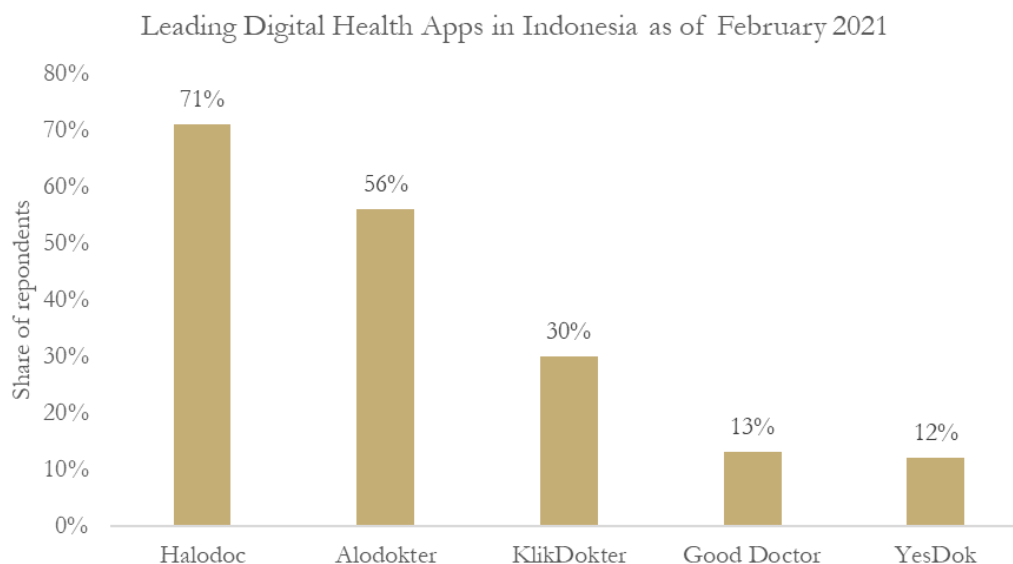

Figure 2 Leading Digital Health Applications in Indonesia as of February 2021

Source: Statista, 2022

Halodoc and Alodokter, two of Indonesia's top digital health applications, have raised a significant funding from several investors (Crunchbase, 2022). Halodoc raised a total of $145 million in 2021, while Alodokter raised $45.1 million in total fundraising in that year. These figures are demonstrated to be a significant investment when compared to the funds obtained by the DoctorAnywhere application in Vietnam ($96.8M) and the MyDoc application in Singapore ($6.8M) in 2021.

Despite the fact that Indonesia has a large selection of digital health applications, the number of penetrations of these digital health applications is still relatively low. Even the market's top application in Indonesia, Halodoc, only penetrated 8.9% of the country's internet users (Manurung et al., 2022). Several factors identified from previous research contributed to this low penetration, including ease of use (Santoso et al., 2021; Moslehpour et al., 2018), technology literacy (Napitupulu et al., 2021; Arnidhya et al., 2022), customer experience including satisfaction and trust (Tarmidi et al., 2021; Zagita et al., 2019; Manurung et al., 2022; Nurzazizah & Novita, 2021), and favorable brand perception (Mbete & Tanamal, 2020)

Many research has been conducted on the intention to use digital health applications using the Technology Acceptance Model (TAM) with variables of perceived ease of use and perceived usefulness. However, research that investigates the influence of brand image on customer experience and thus lead to the actual use of digital health applications is relatively limited. The discussion of this writing focuses on understanding the influence of brand image in the relationship between customer experience and actual use of digital health applications by selecting Halodoc, Alodokter, and Klikdokter as the top three leading digital health applications in Indonesia as the case study.

DIGITAL HEALTH APPLICATIONS – TELEHEALTH

Digital Health Applications are often referred to as telehealth and offer online medical consultations, prescription delivery, and on-demand lab testing (Ashari et al., 2021). Information and communication technology (ICT) facilitates public access to health information and education, supporting innovation in digital health services. Utilizing telehealth also aids in developing and strengthening public health in general. However, there are also unfavorable reviews found on these health applications, such as privacy concerns, insufficient features, and poorly performing healthcare professionals.

Despite the fact that there are numerous digital health applications available in Indonesia, approximately only 8.9% of Indonesian internet users use Halodoc, the market leader application in Indonesia (Manurung et al., 2022). Thus research on the behavior of using digital health applications is vital to assess system upgrades and overall customer experience.

TECHNOLOGY ACCEPTANCE MODEL (TAM)

Davis (1989) developed the Technology Acceptance Model (TAM), which immediately gained popularity as a framework for analyzing the factors influencing consumers' adoption of new technology. According to Davis (1989), people's preferences for using technology – referred to as perceived usefulness – depend on how much they think it will enhance their capacity to accomplish their work (Davis, F.D., 1989). TAM presumes perceived usefulness as mediating role in a complex relationship between system attributes (external factors) and possible system utilization.

TAM is a "robust" paradigm for characterizing the adoption of technology in diverse study objects (Ashari et al., 2021). However, TAM's application contains certain flaws, one of which is unrestrained user activity. It only applies to one information system and has not been stated for trust in the use of information systems (Venkatesh et al., 2003). TAM's flaws in the adoption of telemedicine services include its inability to explain how social contact influences the acceptance of new technology in developing countries (Kamal et al., 2020). Thus, it is suggested that TAM be altered and tailored to the research's subject. Ashari et al. (2021) included social factors in the definition of individual behavioral intents while using digital health applications, including interpersonal interactions, anxiety levels, and service accessibility. Customer experience serves as a mediating function, and brand image serves a moderating role in this study, which will be further discussed in the research framework that is illustrated below.

PERCEVIED EASE OF USE (PEU)

The degree to which individuals believe adopting technology would need less effort to perform a task is described as perceived ease of use (PEU) (Davis, F. D., 1989). PEU measures how much a person considers using a particular system would be simple (Valencia-Arias et al., 2019). PEU, according to Moslehpour et al. (2018), also describes how easily users may access websites, utilize internet services, and perceive particular technologies. İf a user, believes a certain program is simpler to use than another, they are more inclined to utilize it. Therefore, this principle holds that if an information system is simple to use, users will be more likely to use it.

The ease of use within health applications has a considerable influence on attitude (Alsswey et al., 2018; Raza et al., 2017). Users of health applications perceive the effectiveness of their simple use in the consultation process to enable quick and convenient real-time services (Ashari et al., 2021). İt is suggested that users of digital health applications would consider them simple to use, which will lead to an increase in their favorable sentiments (Raza et al., 2017).

PERCEIVED USEFULNESS (PU)

The degree to which individuals believe that technology will increase their capacity to carry out their jobs is known as perceived usefulness (Davis et al., 1989; Ashari et al., 2021). Having a beneficial perspective while adopting health applications refers to a person's belief that using digital health applications would enhance their health and quality of life by giving them access to rapid, affordable, and simple health information (Deng et al., 2018). Positive attitudes that arise in the use of health applications are influenced by useful perception. Applications for digital health that provide medical consultation services and health information are advantageous to users. İt improves their condition (Alsswey et al., 2018).

Regardless, Kamal et al. (2020) stated that the definition of perceived usefulness (PU) required to be updated as the utility of a system for consumers had changed substantially since the term was first established (Kamal et al., 2020). Customers believe that utilizing digital health applications will only be advantageous if it results in quicker delivery of medical services with affordable medical inspection, better documentation, and reduced service time (Kamal et al., 2020). İndividual attitudes toward digital health applications are positively impacted by useful perception as more benefits are perceived. People will therefore be more motivated to constantly utilize digital health applications when they believe doing so would result in improved outcomes (Kamal et al., 2020).

CUSTOMER EXPERIENCE

McLean et al., (2018) suggested that "the customer experience s the evolution of a person's sensorial, affective, cognitive, relational, and behavioral responses to a brand by living through a journey of touchpoints along the pre-purchase, purchase, and post-purchase and continually judging this journey against response thresholds of co-occurring experiences." As a result, the customer experience can be seen as a holistic process and a combination of both cognitive and emotional components contributes to a lasting impression (McLean et al., 2017).

According to McLean et al. (2018), a positive customer experience has been defined as resulting in outcomes including satisfaction, trust, re-visit intention, re-purchase intention, and loyalty. Regardless of the service delivery method they select, such as in-store, online, or mobile applications, the consumer always has a shopping or service experience, whether it is favorable, unfavorable, or neutral.

ACTUAL USE OF DIGITAL HEALTH APPLICATIONS

The use of the actual system is defined as a form of the external psychomotor response that a person measures with real use (Davis, F. D., 1989). The phrase "using the system in a real condition" is frequently used to describe actual system usage. People will be satisfied using a system if they believe it is easy to use and will boost their performance, as shown by the actual conditions of users (Alhashmi et al., 2019).

User acceptance is predicted and explained using actual usage while assessing the development of information technology systems. The system is believed to be effective if the user base grows and they continue to utilize it. Numerous studies have already examined COVID-19's Halodoc application usage (Manurung et al., 2022; Ashari et al., 2021). The findings demonstrate that user satisfaction and actual usage of the Halodoc application during COVID-19 are significantly influenced by perceived ease of use and perceived usefulness.

EFFECT OF PEU AND PU ON CUSTOMER EXPERIENCE

As highlighted previously, satisfaction has been outlined as the outcome of a positive customer experience (McLean et al., 2018). According to a study on Halodoc customer satisfaction in Semarang, perceived ease of use has been indicated to have a significant effect on customer satisfaction (Manurung et al., 2022). Similarly, research conducted on GO-JEK application users in Denpasar city also proves that perceived ease of use has a positive and significant effect on customer satisfaction (Mandasari & Giantari, 2017). This implies that the more functionality the GO-JEK application technology offers, the more ease and happiness its user will experience.

Moreover, a happy emotional and behavioral state is satisfaction. According to a prior study, perceived usefulness positively affects users' satisfaction with using a certain technology (Zagita et al., 2019). As highlighted previously, consumers are more satisfied with a service if there are more benefits gained from using it and if it is simple to use. Users of online health services are more likely to have positive views about the services when they can confirm their expectations about the technical functionality of the service.

EFFECT OF CUSTOMER EXPERIENCE ON ACTUAL USE OF DIGITAL HEALTH APPLICATIONS

Research conducted by McLean et al. (2018) identified a number of successful customer experiences, including re-visit intention, loyalty, and trust. Customers will use the applications more frequently when they have a positive experience. This study is further supported by previous research by Widjaja et al. (2022). They stated that patient satisfaction had a significant impact on patients' intentions to continue using a mobile teleconsultation application.

POTENTIAL MODERATING ROLE OF BRAND IMAGE

The collection of opinions a consumer has, whether positive or negative, regarding a product or service is often referred to as brand image (Mbete & Tanamal, 2020). Customers are supposed to see brand opposition as information that will be remembered and, inevitably, utilized as a guide when making judgments (Lowey et al., 2014). Based on Kotler (2022), an individual's brand image is the sum of their concept, belief, and perception of the brand. As a result, the brand image acts as a representation of how the public perceives a firm (Sanijiwani & Susana, 2019).

For a business to be able to boost consumer confidence when utilizing its products, inevitable brand image is crucial. A company's development is significantly influenced by its brand image. Based on a previous study, brand image has a major impact on influencing purchase decisions and serves as one indicator that significantly influences customer satisfaction and also customer experience as a whole (Rizki et al., 2019).

Overall, the narrative review method was used in this study to combine the findings of multiple studies from leading journals, reviews, and chapter books (Popay et al., 2016). Based on the above relationship between variables, there are several hypotheses and a framework developed to apply the interconnectedness between the influence of brand image on the customer experience and the actual use of digital health applications.
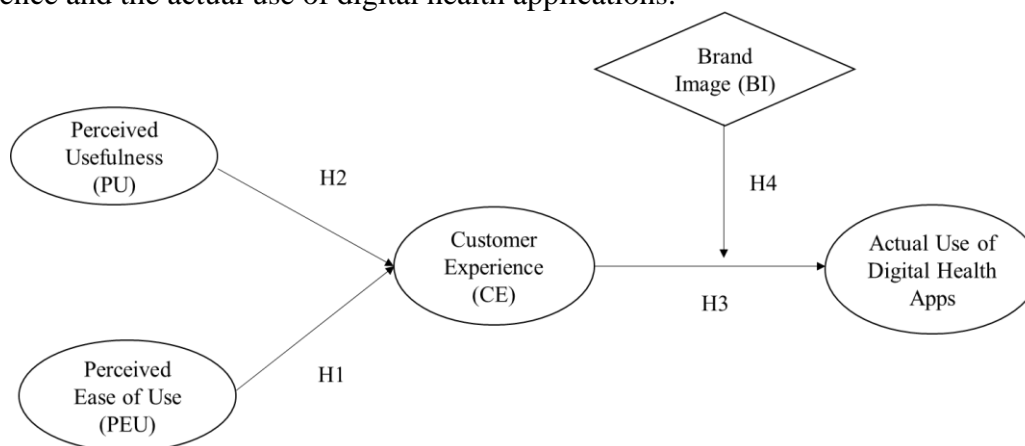

Figure 3. A Conceptual Model Illustrating the Interrelationship among Five Different Concept

Source: Author Elaboration

From the illustrated framework in figure 3, the perceived ease of use and perceived usefulness hypothetically have effects on customer experience to using digital health applications such as Halodoc, Alodokter, and Klikdokter. Customer experience, in particular, again hypothetically has an effect on the actual use of digital health applications. Furthermore, brand image can play a potential moderating role that influences the relationship towards customer experience on the actual use of digital health applications.

CONCLUSION

Extended Technology Acceptance Model (TAM) has considerably advanced our understanding of the intention to use digital health applications. This is a learning process that calls on the digital health application players to imply a profound understanding of designing effective strategies that accommodate customers' preferences for access and information and exchange to synergize digital service offering with interpersonal touchpoints to increase the use of digital health applications. Brand image can be treated as a potential moderating role in influencing the customer experience and actual use of digital health applications.

As this study is primarily based on literature investigation, a steady stream of future empirical studies using quantitative is required to further enrich this study and connect its development environment with the industry context.

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