

The Use of Mobile Wallet Services Apps in Urban Living

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Abstract—Urban life refers to people living in towns and cities, the most important feature of which is high mobility. Living in urban areas has been found to reduce leisure time because of a highly scheduled life, which means that many residents are now relying on technology to achieve their schedules. In this digital era, mobile applications such as mobile wallet services are making it easier for non-cash transactions, such as food and beverages, equipment, health, education, restaurants, hotels, transportation, communication, and others. This study used a quantitative approach using online questionnaires on 80 students living in the Jakarta Metropolitan Area; Jakarta, Bogor, Depok, Tangerang, and Bekasi; to assess their use of mobile wallet applications, from which it was found that the top three uses were for food and beverages, to top up phone credit, and for movies or concert tickets, and the top three factors influencing their adoption of mobile wallets services were the wallet promotions, and the easier and faster transactions. These perceived benefits of using mobile wallet services are developing a cashless society.

Keywords—cashless society, digital mobile technology, mobile wallet services, mobility, urban life

I. INTRODUCTION

An urban environment is defined based on population density, a concentration of administrative bodies and infrastructure, and a diverse range of livelihood and income generation activities (Center of Expertise for Urban Programming, 2013); therefore, urban areas are generally highly developed, have high population densities, dense residential living and a high proportion of commercial buildings, roads, bridges, railways, and highways.

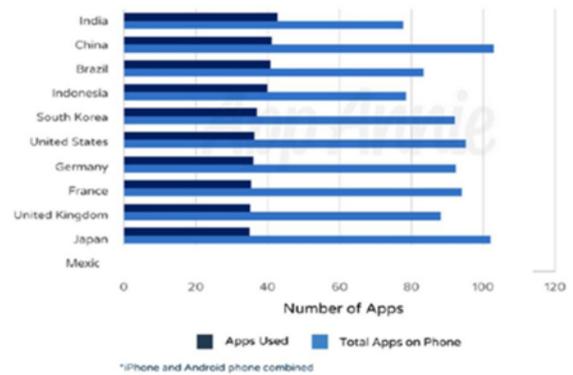
Urban living has been found to trigger changes in a community's living and cultural attitudes, particularly in terms of residential design and layout, and there is often a significant urban divide based on class, status, and financial status (Mohamad and Ayob, 2013). The growth in urban environments has also been found to significantly affect quality of life and had also widened the gap between people who can freely move about and people who have limited movement due to mobility impairments (Palazzi and Bujari, 2016).

Mobility is the ability of an individual to take advantage of available resources (having) in real conditions (being or doing) based on a specific set of available opportunities (Nuvolati, 2008). For instance, someone who travels using public transport may take an hour or longer to travel because of insufficient traffic flow; however, if there is suitable

public transport infrastructure, the traffic flow in the city is more fluid; therefore, problems occur because of poor information about unpredictable situations. However, this situation is slowly being improved with mobile digital technology such as Google Maps or any other map services that provide information about the best and quickest way to move around a city.

Mobile technology has ubiquitous sensing and communication capabilities and enables the gathering of data about a person's surrounding environment (Palazzi and Bujari, 2016). In other words, because urban dwellers tend to have highly scheduled lives, mobile technologies are able to provide them with updated information to make their lives more practical. Therefore, unwittingly, mobile digital technology has become a central part of everyday life and is becoming increasingly important for urban development and management.

In Indonesia, 59.67% of people access mobile data using a smartphone device, 2.88% use a personal device, and 32.10% use both (APJII, 2017).



Source: Retrospective: A Monumental Year for the App Economy

Fig. 1. Indonesia's Average Number of Mobile Apps Used, Indonesia is One of the Most Active Users of Mobile Applications in the World

A more recent mobile application has been for mobile payments. In early 2015, a mobile payment product was introduced on the market focused on the youth and urban lifestyle market. Since it was first launched, it has been downloaded by more than 1 million users and has had an activity rate of 19% and a growth rate of 49% (Manaf and Ariyanti, 2017). A recent survey (2017) of 1,000 urban consumers in 25 Indonesian cities revealed that about a third

were using mobile payments at least once every three months (Nikkei, Inc, 2017).

Mobile payments, which are also known as mobile wallet services, generally refer to non-cash payment services operated under financial regulations and performed from or via a mobile device to purchase goods such as food and beverages, equipment, health products, education, restaurant meals, hotels, transportation, and communication. Therefore, to supplement their high mobility, urban dwellers are able to easily purchase goods without cash, thereby saving time.

In addition, urban communities are slowly developing cashless society habits. As predicted by the Bank of Indonesia, Indonesian society is moving towards a cashless society where every transaction is by card or using an app on a mobile device (cashless society). Based on central bank data, the average daily electronic money transactions in 2017 reached Rp 60 billion, an increase of 120% compared to 2017 (Rp 27.7 billion) (Asmara, 2018).

Therefore, the objectives of this study were to determine the preferences for the use of mobile wallet services and the factors influencing the adoption of mobile wallet services that relate to the cashless behavior patterns of urban university students.

II. LITERATURE REVIEW

A. *Urban Life and Mobility*

Van Diepen and Musterd (2009) defined urban life characteristics as “expressive”, “outgoing”, “culturally prone”, “active”, “multiple”, “tolerant”, “consumptive”, “public” and “deliberate”. In other words, life in urban areas is always busy, crowded, and in which people have little leisure time and high mobility, especially nowadays when cities are growing and moving towards the digitalization of service institutions, infrastructure, and hundreds of other digital and urban service applications (Martinussen, et.al, 2018). Therefore, the term mobility is generally understood to mean the ability to access mobile phone services and conduct transactions from anywhere within a mobile network area from a variety of mobile devices such as personal digital assistants and mobile phones (Kim et al., 2010). The concept of a cashless society was actually based on electronic transaction (e-transactions). Sajter (2013) defined the cashless society as an economic eco-system in which palpable, physical money such as paper banknotes and metal coins were replaced with virtual digital money and where cash circulation was substituted with payments by credit, debit, pre-paid, and contactless cards or through mobile devices (cell phones).

B. *Mobile Payment/Mobile Wallet Services and the Cashless Society*

As technology has advanced, many types of electronic payment systems have emerged such as credit cards, debit cards, electronic cash and check systems, smart cards, digital wallets, contactless payments, and mobile payments (Bezhovski 2016). Mobile payments are payments that are made using mobile devices for services that take advantage of wireless and other communication technologies (Dahlberg, 2015). The use of this mobile technology has led to a significant rise in cashless payments. A cashless transaction refers to an economic setting whereby goods and

services are transacted without cash (Akhalmeh Paul & Friday, 2012), either through electronic transfer or cheque payment. Nowadays, people can easily make payments anytime using mobile wallets, which is leading to the emergence of the cashless society.

III. RESEARCH METHODOLOGY

This was a descriptive quantitative research in which numbers were used to explain the findings (Kowalczyk, 2016). The data collection techniques involved a mini online survey and literature review. The survey was conducted online and completed by 80 university students living in the Jakarta Metropolitan Area; Jakarta, Bogor, Depok Tangerang, and Bekasi. Data processing of the survey results was conducted using the Statistical Package for the Social Sciences (SPSS) 16 and Microsoft Excel 2013 to obtain the descriptive information. Descriptive analysis was conducted to on the respondents' answers.

IV. RESULTS AND DISCUSSION

As shown in Table I, 22.9% (n = 19) were male and 77.1% (n = 61) were female. Most respondents were aged between 18 and 20 years old (43.4%, n = 35) and over one-third lived in Jakarta (36.1%, n = 30), followed by Bogor (23%, n = 23). Over half (55%, n = 45) had had experience using the m-payment service for 1–3 years and their monthly expenses were between Rp100,000–Rp249,999 (50%, n = 41).

Of the 80 respondents, the most used mobile wallet service application was Go-Pay, followed by OVO, and Telkomsel T-Cash (Figure 2). MDI Ventures & Mandiri Sekuritas Research (2017) found that the adoption rate for app-based mobile payment services had overtaken traditional mobile payment services in recent years. GoJek's GoPay was only launched in 2016, but now leads in terms of Gross Transaction Volume compared to the older services such as Telkomsel T-Cash (launched 2007) and Mandiri e-Cash (launched 2013). While the OVO mobile wallet service is relatively new as it was only launched in 2017, it already has many users (Figure 3).

The increase in mobile payments has enabled a significant transformation in mobile payment services, allowing for the building of partnerships with F&B and lifestyle merchants. Further, the addition of personal savings and investment features into the existing mobile payment services (subject to regulatory approval) could help drive adoption, especially in areas that have limited access to formal financial services (MDI Ventures & Mandiri Sekuritas Research, 2017). In other words, people would have to regularly top up the money in their mobile wallet to be able to use it anytime whenever it is needed or access their savings for any unexpected uses.

It was found that mobile wallet services were mostly used for food and beverages, followed by topping up phone credit, and tickets for cinemas, amusement parks, concerts, etc (Figure 4). Huwaydi and Persada (2018) also found that Go-Pay was most commonly used for Go-Food services.

The most popular mobile wallet service was Go-Pay because it was most used for buying food and beverages. Daily Social Research (2016) found that cashless payment instruments in Indonesia are often used for money transfers, online shopping, and buying air time (phone credit).

TABLE I. RESPONDENT CHARACTERISTICS

		Number	Percentage
Gender	Male	19	22.9%
	Female	61	77.1%
Age	18–20 years	35	43.4%
	21–23 years	16	20.5%
	24–26 years	21	26.5%
	26 years and above	8	9.6%
Domicile	Jakarta	30	36.1%
	Bogor	23	27.7%
	Depok	10	13.3%
	Tangerang	9	12.1%
	Bekasi	7	10.8%
Mobile wallet services prior experience	1 year and below	32	40.0%
	1–3 years	45	55.0%
	3 years and above	3	5.0%
Mobile wallet services monthly expenses	100.000 and below	20	25.0%
	100.000–249.999	41	50.0%
	250.000–499.999	11	13.8%
	500.000–1.000.000	3	6.3%
	1.000.000 and above	4	5.0%

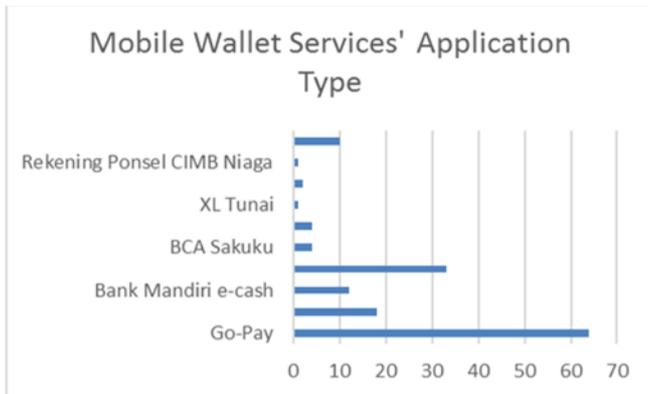


Fig. 2. Mobile Wallet Services' User Base

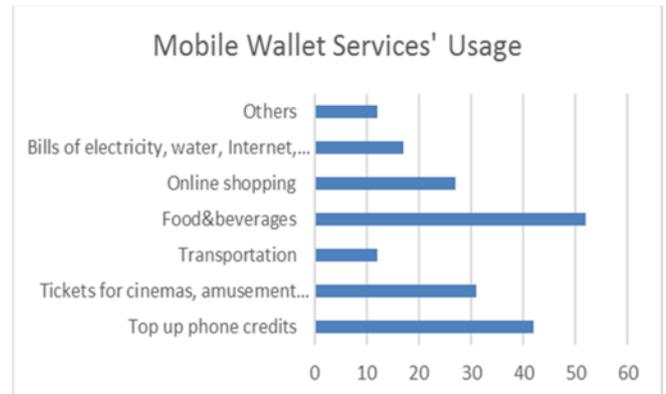


Fig. 4. Mobile Wallet Services Usage

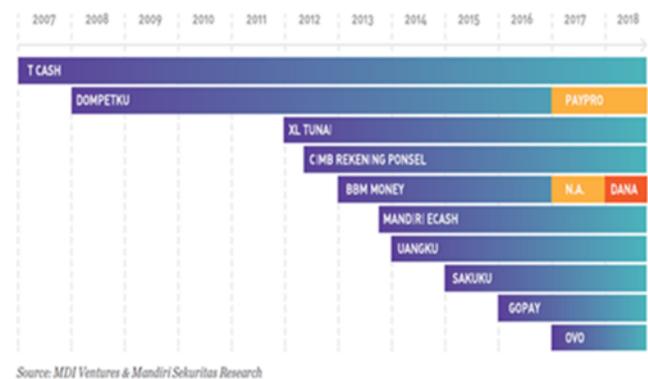


Fig. 3. Mobile Wallet Service Launch Times

With the dynamic growth in advanced technologies, how fast consumers are accepting these technologies depends on several factors such as the availability of technology, convenience, consumer need, and security. (Lai, 2017). These factors can be determined using the TAM model introduced by Davis (1989) that assesses two specific beliefs: Perceived Usefulness (PU) and Perceived Ease of Use (PEU). PU is defined as the use of technology that can heighten people’s work, and PEU is defined as the belief by people that the technology is easy to use.

Based on this research, the 80 respondents agreed that using mobile wallet services technology allowed them to better control their spending (Figure 5). As stated in “Mobile payments: What’s in it for consumers?”, an economic review by Fumiko Hayashi (2012), mobile payment methods have several advantages in terms of managing finances and

controlling spending. As mobile payments enable consumers to check their account balances prior to making a purchase, they can assist consumers manage their finances and control spending as they can set purchase thresholds for different spending categories. A consumer is then alerted when their threshold is going to be reached, regardless of which payment instrument is being used (Hayashi, 2012).

Second, the respondents agreed that by using this technology, they were assured of secure transactions (Figure 5). Shen et al. (2010) found that the key benefit of mobile payment was convenience and the key cost was security. In line with this, the use of mobile payments also provides secure information transfer between devices, from single or individual transactions to high volume payments, such as to restaurants or to large retailers (Leong, Hew, Tan, & Ooi, 2013), the latter of which may require the user to input a secure PIN or password to approve the transaction (Li et al., 2014).

Lastly, the respondents also agreed that making transactions using mobile payments was better than cash (Figure 5). In its recent Consumer Payment Attitudes study, Visa found that nearly eight out of 10 Indonesians (76 %) said that they could go without cash for an entire day, and half would like the country to become a cashless society (The Jakarta Post, 2018).

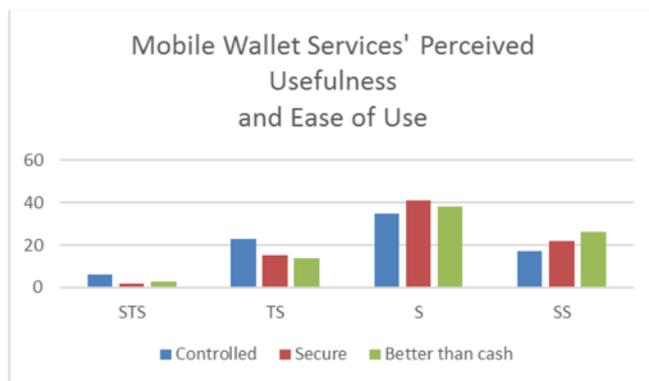


Fig. 5. Mobile Wallet Services' Perceived Usefulness and Ease of Use

This research also found that the reasons the respondents started using the mobile wallet services was because there were many promotions available at transaction checkout (Figure 6). Mobile payments also greatly increase the opportunities for consumers to receive targeted ads and promotions from brick-and-mortar merchants (Hayashi, 2012), which are received when they are loyal customers, or because they carry their mobile phones everywhere, they can receive ads and promotions on the mobile payment application while they are in or near a store, not just when they are going through the store checkout (Hayashi, 2012).

Mobile wallets also make transactions easier. Mobile payments make it easier for consumers to choose from several options at the point of sale (Hayashi, 2012). Huang (2017) claimed that because of the advanced communication and interface functions, customers are easily able to customize their shopping modes and personal services, which makes the account transactions easier.

Hayashi (2012) found that the main advantage of mobile payments was the faster queue-free transaction speed for certain types of purchases such as buying tickets for concerts and movies, etc. Patel (2016) found that student perceptions

about the usefulness of mobile wallet services was that they could increase purchase efficiency. As shown in Figure 6, mobile wallets provide effective and efficient transaction payments. In agreement with Akinola (2012), cashless payments are able to enhance the remote access to payments, reduce queues and save time. Non-cash transaction mechanisms were also found to be correlated with the Central Bank of Indonesia regulation to provide efficient transaction value (Gunawan et.al, 2013) in Abbas (2017).

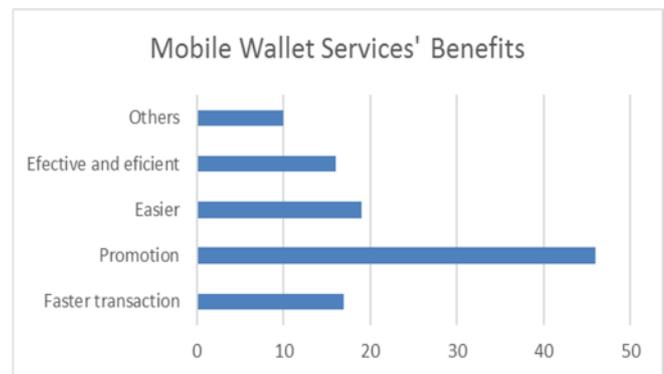


Fig. 6. Mobile Wallet Services' Benefits

Based on the preferences and the identified factors for the use of mobile wallet services, students living in urban areas are slowly starting to accept the cashless society. The more often they use e-transactions, the more they understand the usefulness and ease of use; however, the shift to a future cashless society is also supported by the growing number of digital savvy consumers in Indonesia.

V. CONCLUSION

The most used mobile wallet services for students in Jakarta was gojek's Go-Pay. The students said that they preferred to use mobile wallet services to purchases food and beverages, to top up phone credit, and to buy movie and concert tickets. The top three factors influencing the students' adoption of the mobile wallet services were the availability of promotions and easier and faster transactions. To sum up, the increasing rate of the use of mobile wallet services is leading to cashless behavior patterns in the urban life of university students in Indonesia.

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