Cashless Society in Progress: capturing different generations' perspectives toward external influence in e-wallet usage

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A R T I C L E   I N F O

A B S T R A C T

The use of non-cash transaction, which is currently popular in the public, has made the topic of a cashless society discussed more often. A cashless society is a condition where people transact without using cash money so that it leads to the process from the conventional into the cashless society. In this condition, the involvement of each generation is needed. This study tries to investigate how each generation's perspective—both the younger generation and the older generation, toward the external factors, namely social influence, government support, and network externalities—affect their use of non-cash transactions in the form of e-wallet. The data were collected using focus group discussion (FGD) and a survey of 489 respondents. The data were analyzed using PLS-SEM. This research reveals how different generations have a different perspective on e-wallet and the government support has a more significant influence on the older generation than the younger generation, who tend to be more influenced by peers or family. However, both generations emphasized how the network externalities influenced the continuance usage in this service. This result implies the importance of e-wallet service providers to expand the network and collaborating with various actors to retain customers.

A B S T R A K

Penggunaan transaksi nontunai yang saat ini sedang populer di masyarakat membuat istilah cashless society semakin sering dibahas. Cashless society adalah suatu kondisi dimana masyarakat bertransaksi tanpa menggunakan uang tunai sehingga mengarah pada proses dari konvensional menuju cashless society. Dalam kondisi ini, keterlibatan setiap generasi sangat dibutuhkan. Penelitian ini mencoba mengkaji bagaimana cara pandang masing-masing generasi—baik generasi muda maupun generasi tua, terhadap faktor eksternal, yaitu pengaruh sosial, dukungan pemerintah, dan eksternalitas jaringan—mempengaruhi penggunaan transaksi nontunai dalam bentuk e-wallet. Pengumpulan data dilakukan dengan FGD dan survei terhadap 489 responden. Data dianalisis menggunakan PLS-SEM. Penelitian ini mengungkapkan bagaimana generasi yang berbeda memiliki perspektif yang berbeda terhadap e-wallet dan bagaimana dukungan pemerintah memiliki pengaruh yang lebih signifikan terhadap generasi yang lebih tua daripada generasi yang lebih muda, yang cenderung lebih dipengaruhi oleh teman sebaya atau keluarga. Namun, kedua generasi tersebut menekankan bagaimana eksternalitas jaringan mempengaruhi kelangsungan penggunaan dalam layanan ini. Hasil ini menyiratkan pentingnya penyedia layanan e-wallet untuk memperluas jaringan dan berkolaborasi dengan berbagai aktor untuk mempertahankan pelanggan.

1. INTRODUCTION

The increasingly advanced technology makes digitization irreversible today and it has developed so fast. This era is called the industrial revolution 4.0, where digitalization plays an important role and makes many changes, starting from communication technology, trade, and banking to indirectly affecting habits in society (Cugno et al., 2021). One of the significant changes in the community is a change in the transaction process, where people currently tend to be cashless. This change in payment habits gradually forms a cashless society that is more prevailing over time. Hence, it becomes a community habit that can develop slowly but surely. According to Balakrishnan & Shuib (2021), a cashless society can be understood as a financial

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technology (fintech) revolution where society transforms the payment process to use an electronic wallet or digital card daily payment. The adaptation process and the challenges in forming a cashless society are different from one place to another. The adoption of cashless payments in developed countries is higher rather than in developing countries. It should be declared that the barrier to the cashless payment adoption process in developing countries is not technological sophistication. The technology is undoubtedly getting more advanced, but the customer behavior of consumers who will adopt this technology becomes the main barrier. According to Leong et al. (2020), the main obstacle in adopting cashless payment might emerge from feeling inconvenient while using cashless payment, cannot find the beneficial side of using cashless; even traditional barriers that impact daily habits. Thus, shaping the routine becomes the essential issue that should be considered while making a cashless society.

Sweden might provide the evidence of the above finding, one of the developed countries predicted to pave its way to becoming the world's first cashless society in 2023 (Fourtane, 2019). As an early adopter of technology, Sweden has already embraced their society to transform cash payment to digital. This has made these changes already implemented in the socio-technical system, and become a daily habit (Teigland et al., 2018). The successful implementation in Sweden shows that forming a cashless society requires a long and complex process involving laws, business interests, technologies, values, and habits. On the contrary, in other countries, the changing behavior such as adopting cashless payments massively often requires special events that ultimately drive the usage generally; one of them is the COVID-19 pandemic.

According to Nicola et al. (2020), this pandemic brings many changes, from socio-economic to lifestyles. However, during this pandemic, where people are trying to prevent the spread of the virus, cashless payments have become a preventive measure to avoid direct contact with other people through the medium of money (Pal & Bhadada, 2020; Yuan et al., 2020; Zhao & Bacao, 2021). Society's tendency to use cashless payment is shown both in developed countries and developing countries. For example, in Malaysia and Indonesia, cashless payment can be seen in e-wallets usage, which has increased drastically during the pandemic (Aji et al., 2020; Teng & Khong, 2021). Policies to maintain distance to large-scale social re-strictions make conventional activities such as going to an ATM or direct shopping become a hindrance that instantly sped up digital transactions (Smith, 2020). However, among all the cashless payment methods, compared to developed countries, the usage of e-wallet has become the most favorable cashless meth-od in developing countries (Gundaniya, 2020).

This pandemic might become a momentum for digital acceleration for the community and transition to a cashless system in digital urban networks (Li, 2021). Driving the digitization of payment and shift-ing society's behavior is not an act that can immediately arise internally; external factors play a more significant role in this change. In the context of fintech products such as e-wallet, social influence from the peer group, family, or even people on the internet was found to positively influence the e-wallet users by making them believe the service will be beneficial and fulfill their needs, based on belief feeling with the persons (Zainol, 2021). While social influence attracts the e-wallet user from the closest circle, the satisfying service, various promotions, and broad network externalities from e-wallet services also make e-wallet users interested in using the service (Qasim & Abu-shanab, 2016). Dharmasaputra (2020) stated that during the pandemic, e-wallet service providers took this opportunity by actively providing promotions in discounts and cash back in large quantities to expand cooperation so that various kinds of online and offline payments can use e-wallets.

On the contrary, in running the e-wallet, the government also gives significant support by using non-cash transactions (Bank Indonesia, 2020). Therefore, the government also becomes part of the e-wallet network externality by providing an option to pay electricity bills using an e-wallet. Furthermore, during the pandemic, the Indonesian government has disbursed the Pre-Work Card subsidy using e-wallets (Kompas, 2020). The role of network externalities, social influence, and government support provides essential external support that can increase people's interest in this service. The network externalities cover the effect from a person's closest circle side, the service provider itself, and more significant power roles such as government. However, even though these external influences affect different sides of e-wallet users, a question arises: among these external factors such as which factor influences the behavior of consumers the most? Furthermore, how do social influence, government support, and network externalities affect the continuity of e-wallet usage?

The appearance of e-wallet—as the most popular fintech product nowadays—serves as a panacea for economic recovery after the pandemic (Evandio, 2020). Hence, understanding the most impactful influence that encourages user continuity usage becomes the issue that should be studied in depth. Moreover, through research conducted by Rapyd (2020), it is known that e-wallets are the most preferred daily trans-action tool, compared to debit cards, ATMs, and bank transfers. Suppose consumer behavior during the pandemic has become a habit. In that case, it can be predicted that after the pandemic, compared to other cashless payment instruments, e-wallets can be the most popular payment method amidst the formation of a cashless society. Even so, the use of e-wallets towards a cashless society is still being developed, especially in developing countries. Many factors influence a user's interest in both starting and continuing. The studies that developed after the pandemic took place, especially about e-wallet intention to use, adoption, and continuance usage in developing countries (Aji et al., 2020; Balakrishnan & Shuib, 2021; Rahman et al., 2020) more focusing on how consumers internally interest to use particular e-wallet service rather than viewing this phenomenon from the external factors that build the consumer behavior and impact in the continuance usage.

This research expects that the finding contributes to the knowledge of consumer behavior in the sector in this study. Furthermore, the finding can contribute to the practical sector related to the continuance of e-wallet usage. This pandemic is proof that external efforts from e-wallet providers and support from the government have played a role in increasing e-wallet usage nowadays. Therefore, understanding which external factors most effectively influence e-wallets usage in certain age groups can make the cashless society occur at every age level.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

Generational Differences and the Impact on Their Behavior

Every generation has a different issue that forms their characteristic generally. Even though each human is different and cannot be generalized in one character, in terms of age, many issues created the characteristic that impacts the way to act -one of them is in the use of acceptance and usage to a new technology-related service. This fact shows through e-wallet usage in Indonesia, which the Millennial Generation dominates (Catriana, 2020). The next generation that dominates the e-wallet usage is Generation Z as the new younger generation (Ipsos, 2020) than older generations such as Generation X. Millennial and Generation Z as a generation who have already been exposed to technology in daily life, have a higher acceptance and adoption toward e-wallet usage (Pertiwi et al., 2020; Wei et al., 2021) rather than the older generation. However, the older generation, such as Generation X or even baby boomers, can also adopt e-wallet even though this generation has a lower usage rate (Felix, 2019).

Indeed, the largest e-wallet market is younger generations such as millennial and Generation Z. However, if a cashless society is to be formed, it requires various ages. Even though each person has different features and issues that become their essential concern while using an e-wallet, the external factor always impacts their behavior (Acheampong et al., 2018; Leong et al., 2020; Moorthy et al., 2017). From this fact, it has been noticed what kind of external stimulus can affect each generation in accepting external influences, building perceived security, the continuance use of e-wallet, and loyalty.

Government Support

In the context of digital payment methods such as e-banking, e-wallet, and other related services, government support is found to foster the service's development and improve customer acceptance rate (Sánchez-torres et al., 2017).As the nation decision-maker, government support can be shown from many aspects: from facilitating the fundamental elements such as internet access speed, making legislation for both the provider and customer and even involved in collaboration with the service itself (Aji et al., 2020; Appiah et al., 2019; Dawi, 2019). From the consumer perspective, the government's involvement by periodically updating the rule can make society feel safer and believe in the credibility of the licensed service(Chawla & Joshi, 2019; Hagos & Singh, 2019). Whereas from the service providers' perspective, the government support can provide favorable regulations or even become the collaboration partner which at the end, broader the e-wallet network externalities (Chung & Yoo (2015). Hence, we hypothesize that:

H$_{1a}$: Government support (GS) can increase perceived security (PS) towards e-wallet user

H$_{1b}$: Government support (GS) has a positive impact on perceived usefulness (PU)

H₁c: Government support (GS) in the form of regulation has a positive influence on broader network externalities (NE)

Social Influence

As social creatures, it is undeniable that external factors in social influence often take a role in the decision-making process. According to Smith et al. (2011), social influence affects the customers from those around the customers they have trusted. This influence could come from their closest circle such as family and peers they have personally known (Tunçgenç et al., 2021), even influencers from social media and experts they have trusted (Nafees et al., 2021). The persuasion ability of people the customer has known and trusted has a more decisive influence than marketers' marketing abilities (Kirmani & Rosellina, 2017; Valaei & Nikhashemi, 2017), making them adapt to new things.

Hence, social influence can be the driving factor that can reduce the anxiety to try new things (Slade et al., 2015). However, in e-wallet service usage, social influence can influence people who initially did not use e-wallets by enhancing their trust and understanding of the e-wallet service (Fedorko et al., 2021). Trust somehow becomes a critical issue in e-wallet service, which can be enhanced by social influence due to people's risk, especially in economic and security risks. According to Lin et al. (2020), these risk factors are considered crucial financial services risks, such as e-wallet. Therefore, perceived security becomes the vital factor that can be achieved by social influence directly (e.g., social persuasion) or indirectly (by seeing society using certain e-wallet that serves adequate security).Furthermore, social influence has the power to provide a domino effect. One e-wallet user can persuade other users, and it will be continued and make a more extensive community that uses e-wallet service. Therefore, the hypothesis is stated as follows:

H₂a: Social influence (SI) has a positive impact on e-wallet user-perceived security (PS)

H2b: Social influence (SI) has a positive impact on perceived usefulness (PU)

Network Externalities

Financial services, especially e-wallet, aim to make consumers' payment activity easier and more efficient (Leong et al., 2020). As based on the goals to be achieved, the number of users to the merchants collaborates with a particular e-wallet service, taking an essential role in influencing the behavior toward the e-wallet user. The influence also applies to users that previously have not used the service, even the continuance of e-wallet usage. Katz et al. (1985) explained this condition as network externalities that can be understood as the increased utility or benefits users feel when more and more users use these services (Huang et al., 2017). In the e-wallet sector, the term user can be understood from personal use and the collaborating merchants. Therefore, the impact of network externalities can make user-perceived usefulness from the particular e-wallet service they used.

In reference to the primary function of an e-wallet is the way how it can be used for various kinds of service payments; from transferring the balance to other users to paying to multiple merchants, the broader network externalities might make the user understand the benefit they need. Moreover, It can become the intention to continue e-wallet usage for a long time (Cheng, 2020). Therefore, the hypothesis can be stated as follows:

H₃: Network externalities (NE) have a positive impact on perceived usefulness (PU)

Perceived Security and Perceived Usefulness on the Continuity of E-wallet Usage

In every service, especially money-related services such as banking, mobile banking, and even e-wallet itself, trust becomes an essential factor that significantly impacts users' intention to use and continuance of using a particular service. The previous research that discussed e-wallet finds that perceived security becomes the main issue and it must be achieved to generate a sense of trust in e-wallet service (Zhang et al., 2019; Kumar et al., 2018; Patel & Patel, 2018). Arpaci et al. (2015) state that perceived security is a level of user belief that the technology they used containing sensitive information such as personal data or financial transactions will be guarded safely and will not be misused for other uses (Keisidou et al., 2011). Trust is always an important issue that can emerge after the customer feels secure with the financial service they used, thinking that it can provide adequate security (Singh & Srivastava, 2020). Therefore, perceived security becomes the main issue that should be fulfilled. Based on this argument, the hypothesis can be stated as follows:

H₄a: Perceived security (PS) has a positive impact on the continuity of e-wallet usage (CU)

Apart from trust, perceived usefulness also plays an essential role in building attitude and behavioral intention (Kustono et al., 2020) to continuity of e-wallet usage. In perceived usefulness, consumers believe that the e-wallet service can make their activities more effortless and effective (Aji et al., 2020). In general, perceived usefulness describes a user's cognitive expectation about the performance (Zainol, 2021). Hence, we hypothesize:

H$_{4b}$: Perceived usefulness (PU) has a positive impact on the continuity of e-wallet usage (CU)

Price Orientation
It is prevalent that price has a psychological impact on customer behavior; hence it has become a critical issue in every marketing sector (Chua et al., 2015). In financial services such as e-wallet, price takes an important role. Due to e-wallet service, it is now more focused on providing service rather than goods. The price orientation is weighted in the form of discounts or cash back to attract new customers to maintain the customer (Amelia & Fikriyah, 2020). However, to do a sustainable business in e-wallet service, the provider should understand the effect of price orientation on customer behavior and its impact on the continuance of e-wallet usage. From this argument, the hypothesis can be stated as follows:

H$_5$: Price orientation (PO) has a positive effect on the continuance of e-wallet usage (CU)

Loyalty in E-wallet
Loyalty is an extended dynamic process that occurs between brands and customers. Therefore, having a loyal customer is the goal to achieve by having a good brand. Even though various research discussed loyalty, the loyalty's driving facets are still different in each sector. For example, in the financial sector, perceived security becomes the factor that is considered having an impact on continuously using the service and, therefore, it appears essential for improving the customer's loyalty (Fianto et al., 2020; Jiang et al., 2016). The previous research has also found that customer loyalty is indicated by the customer who continuously wants to patronize a particular service or goods brand even though a situation influences switching behaviour (Abu-alhaija et al., 2018; Oliver, 1999; Uddin, 2019). This relationship continuity will increase customer loyalty in using financial service products (Faryabi et al. 2015). Moreover, loyal customers can attract new customers by advocating for them. Therefore, the continuance of usage and the awareness toward a brand or goods has a broader sense. Therefore, we hypothesize:

H$_{6a}$: Perceived security (PS) has a positive impact on loyalty (L)
H$_{6b}$: The continuity of e-wallet usage (CU) has a positive impact on loyalty (L)

Based on the literature review and hypothesis development discussed above, the conceptual framework of this research can be presented as in Figure 1.
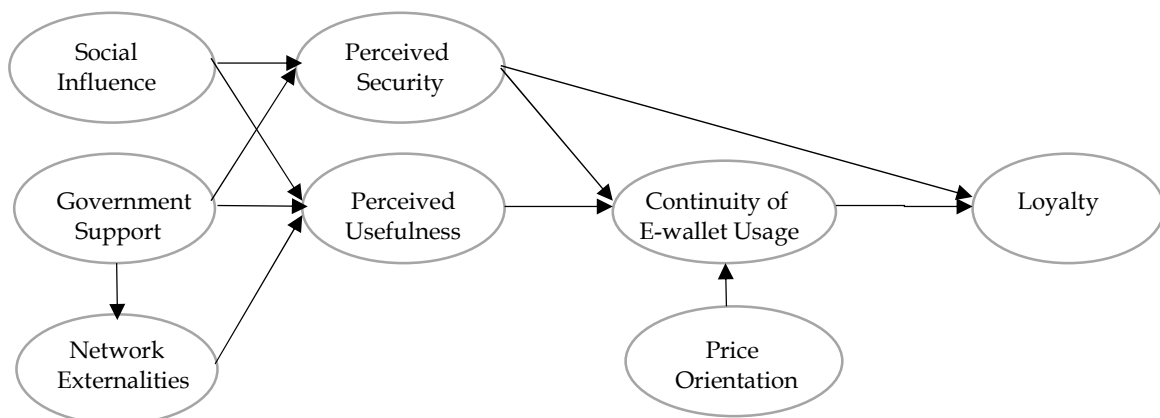

Figure 1. Conceptual framework

3. RESEARCH METHOD

Types of Research and Data Source

To achieve the research objectives, namely to examine the hypotheses, this research uses mixed-method for collecting the data. The data analysis process was divided into two steps. The first step is using Focus Group Discussion (FGD). The second is distributing the online questionnaire.

Population and Sample

The first step of collecting the data was through FGD, with eight participants aged 22 to 30 years who covered Generation Z and Millennial. They got involved in the FGD as the active e-wallet users. They use this service for their daily payment such as online shopping in e-commerce, paying online transportation, or paying another bill. The frequency of usage and minimum nominal usage was not yet determined while choosing participants. Furthermore, in this FGD, the young generation was chosen to represent the e-wallet users because they are the majority of e-wallet users in Indonesia (IPSOS, 2020). They used this service actively compared to other generations.

Due to the generation's different characteristics (IDN, 2020), they might have various payments that they choose to pay using the e-wallet. In general, they can represent the pre-service, service encounter, and post-service stage on the whole (Tsiotsou & Wirtz, 2015). They have a lot of consideration and information source while deciding to start using this service (Wei et al., 2021), have various desire while using this service (Pertiwi et al., 2020; Teng & Khong, 2021), and know what makes them stay for the long-term usage for particular service they used (Gurău, 2012).

In the FGD process, participants were asked about their use of e-wallet before and after the pandemic. The increased usage rate has become the topic understanding in depth during this FGD. Furthermore, it dealt with the participants' perspectives about the influence of government, whether in the form of regulation or government services that use an e-wallet and social influence, become the main discussion. Their perspective toward service influence and network externalities that influenced their usage are also discussed in this FGD. Moreover, the most interesting information showing that they stay using this service was also discussed. Finally, continuing to use an e-wallet after this pandemic was also discussed during this FGD.

The next data collection was by using an online questionnaire. It was done from May to July. In the end, 489 respondents filled in the questionnaires with the demographics described in Table 2. Since this research aims to understand the different behaviors for the continuance of e-wallet usage between the old and young generations, this research separated the respondents' age into two groups. The first is the young generation represented by Millennial and Generation Z, aged below 41 years old (Frey, 2018), and the older generation represented by Generation X and Baby boomers. They aged 41 years old and above. By adopting two stages of data collection, the data obtained is expected to be robust and can generally capture this issue.

Variable and Measurement

The variables used in the questionnaire were obtained through the results of the FGD. Through the FGD, it was understood that social influence is quite significant in the usage of e-wallet. When the users are assured that the service is safe and they can see the value that the service can provide, the sustainability of e-wallet usage depends on the individual whether the value is needed or not. The involvement of promotion was also found to be influential for the continuance of e-wallet usage.

Now, from the government support side, the government service payment that provided e-wallet did not affect the e-wallet service usage. Participants use mobile banking to pay for this service (such as for paying electrical or water bills) and use an e-wallet to pay for online delivery of food or e-commerce payments. Nonetheless, the government regulation is considered an essential part of encouraging e-wallet services from the network externalities side. It was a surprise that giving a regulation to ensure the user's safety did not immediately make the participant feel safe. This perspective is based on the prevalence of data leakage even though there are laws that protect it.

Through the FGD result, the variables for this research are created and the measurement of each variable is represented through the questionnaire in Table 1. Each respondent's answer was measured using a six-point Likert scale of agreement, with a scale of 1-2 showing low performance, 3-4 showing medium performance, and 5-6 showing high performance. The decision to use an even number for the scale was considered due to this research objective that wants to understand the perspective between different generation toward external influences; hence, the answer that hoped is clearly explained, whether the respondent agrees or disagree with the statement (Youn et al., 2017).

Table 1. Construct and measurement item

Constructs	Items	Adopted and Adapted
Government Support (GS)	**GS1.** Clear and firm regulations from the government regarding e-wallets circulating in the market increased trust feeling toward e-wallet service **GS2.** Payments for various government services (such as paying electrical bills, BPJS, etc.) that are now using e-wallets make me even more interested in using e-wallets **GS3.** Government support and policies encourage the variety of merchants that collaborate with e-wallet, both offline and online	Aji et al. (2020); Russo et al. (2014)
Social Influence (SI)	**SI1.** My family and friends affect me to use the e-wallet **SI2.** The influencer (for example, my favorite idols, social media influencer) endorsement affect me to use the e-wallet **SI3.** Using mobile payment will improve my self-esteem	Wei et al. (2021)
Network Externalities (NE)	**NE1.** Many of my friends and relations frequently use the e-wallet **NE2.** At this time, e-wallet service can be used in many merchants **NE3.** It would be easy for me to find a merchant, both offline or online, that used an e-wallet service	Song et al. (2009)
Perceived Security (PS)	**PS1.** I feel secure putting financial information on an e-wallet **PS2.** I feel safe in my transaction with e-wallet **PS3.** I feel safe providing personal information on e-wallet	To & Trinh (2021)
Perceived Usefulness (PU)	**PU1.** Using an e-wallet makes it easier for me to conduct my daily transactions **PU2.** Using an e-wallet allows me to manage my transactions more efficiently **PU3.** Using an e-wallet increases my productivity **PU4.** Using an e-wallet enables me to accomplish tasks, e.g., payments, faster **PU5.** Overall, I believe an e-wallet is more valuable than traditional ways of conducting transactions	Yang et al. (2021)
Continuity of e-wallet usage (CU)	**CU1.** I intend to continue using e-wallet rather than discontinue their use **CU2.** I intend to continue using e-wallet than use other cashless payment methods **CU3.** If I could, I would like to continue my use of an e-wallet	Bhattacherjee (2001)
Loyalty (L)	**L1.** I will consider using an e-wallet as my first choice for payment in the future **L2.** I will recommend this e-wallet to others **L3.** I will consider an e-wallet as my first choice when conducting cashless payment	Zhou & Lu (2011)
Price Orientation (PO)	**PO1.** I will use the e-wallet service when it is on promotion **PO2.** For payment, between e-wallet, cash, and debit, I will compare the most profitable payment method **PO3.** Using an e-wallet give financial benefit for my daily payment rather than other payment methods	Chua et al. (2015); Kim et al. (2012)

4. DATA ANALYSIS AND DISCUSSION

Table 2 presents the respondents' demographic characteristics. Their age is dominated by those who are in productive age, less than 41 years old, and have a bachelor's degree. The majority of respondents live in Java with an income above Rp.7,000,000. This level of income is far above the regional minimum wage.

Table 2. Characteristics of respondents

Sample Profile		Total	Percentage
Gender	Male	275	56%
	Female	214	44%
Age	<41 years old	316	64.6%
	41 years old and above	173	35.4%
Area of Residence	Sumatra	35	7.1%
	West Java	176	36.1%
	Central Java	35	7.2%
	East Java	53	10.9%
	Yogyakarta	18	3.7%
	Banten	8	1.6%
	Jakarta and Surrounding Areas	153	31.4%
	Bali	7	1.4%
	Sulawesi	3	0.6%
Highest Education	Elementary/Junior/Senior High School	119	24.3%
	Diploma	50	10.2%
	Bachelor	270	55.2%
	Magister	49	10.0%
	Doctoral	1	0.2%
Job	Student	116	23.7%
	Housewife	57	11.7%
	Entrepreneur	68	13.9%
	Private/State-owned enterprise employee	180	36.8%
	Civil Servant	19	3.9%
	Health workers	29	5.9%
	Freelancer	3	0.6%
	Education Worker	16	3.3%
	Retired	1	0.2%
Income	< Rp.1,000,000,-	25	5.1%
	Rp.1,000,001-Rp 4,000,000	67	13.7%
	Rp.4,000,001 – Rp.7,000,000	116	23.7%
	Rp.7,000,001 – Rp.10,000,000	145	29.7%
	>Rp.10.000.000	136	27.8%

As based on the 489 respondents, it is clear to understand the different behaviors between the young and older generations. For this purpose, this research separated the analysis into two parts: the young generation represented by 316 respondents and the older generation represented by 173 respondents. This research uses the SmartPLS application to derive the PLS-SEM. In this research process, the analysis using PLS-SEM is carried out through two stages, namely First-order Confirmatory Factor Analysis (CFA) and second-order CFA. This process was done because, in the first process, several indicators were not valid as a construct and they had

a lower level of outer loadings score. Due to this condition, some indicators should be eliminated. This decision is based on Hair et al. (2014), who states that indicators with outer loading between 0.40 - 0.70 can be removed if the removal of the composite indicators improves reliability and Average Variances Extracted (AVE) above the specified threshold value. On the contrary, the outer loading indicator <0.40 is deleted. Then, some indicators were removed from the questionnaire result for young generation data, namely NE3, PU5, and L1. For the older generation, indicators NE3, SI2, and PO1 should also be removed. After eliminating the indicators, the model was

still to be analyzed in the second order. Furthermore, the validity and reliability test using AVE and Composite Reliability was chosen in this research because the study applied CFA (Hair et al., 2014). In Table 3, the result of AVE and Composite Reliability from both generations is presented. Based on Hair et al. (2014), the minimum AVE value to be met is above 0.50 and the composite reliability is greater than 0.7, then it can be considered adequate for convergent validity.

Table 3. AVE and composite reliability result for both generation

Variable	AVE		Composite Reliability	
	Older Gen.	Young Gen,	Older Gen.	Older Gen.
SI	0.611	0.640	0.758	0.842
GS	0.660	0.540	0.850	0.767
NE	0.621	0.569	0.767	0.726
PS	0.743	0.728	0.897	0.889
PU	0.590	0.521	0.874	0.813
CU	0.671	0.515	0.857	0.759
PO	0.619	0.505	0.761	0.748
L	0.642	0.656	0.842	0.792

Note: Social Influence (SI), Government Support (GS), Network Externalities (NE), Perceived Security (PS), Perceived Usefulness (PU), Continuity of E-wallet Usage (CU), Price Orientation (PO), Loyalty (L)

After checking the AVE and Composite Reliability that fulfill the required value, the following section focuses on the hypothesis. The next step was to test the hypotheses with the bootstrapping method in the SmartPLS application. This research using p<0.05 with the detailed result can be seen in Figure 2 and summarized in Table 4.This research investigated two different generations. Therefore, in the Path Analysis in Figure 2, the Older Generation value is abbreviated as OG, and the Young Generation abbreviated as YG.

Table 4. Hypothesis testing

Hypothesis	Older Generation			Young Generation		
	Coefficient	P-Value	T Statistic	Coefficient	P-Value	T Statistic
H1a GS → PS	0.242	0.041*	2.047	-0.035	0.693	0.395
H1b GS → PU	0.365	0.007*	2.730	0.011	0.909	0.114
H1c GS → NE	0.356	0.020*	2.328	0.308	0.000*	3.759
H2a SI → PS	0.275	0.012*	2.511	0.195	0.007*	2.697
H2b SI → PU	0.226	0.016*	2.419	0.388	0.000*	5.756
H3 NE → PU	0.234	0.020*	2.340	0.235	0.017*	2.404
H4a PS → CU	0.069	0.244	1.166	0.022	0.674	0.421
H4b PU → CU	0.473	0.000*	4.958	0.409	0.000*	4.805
H5 PO → CU	0.350	0.000*	5.472	0.327	0.000*	5.390
H6a PS → L	0.132	0.039*	2.069	0.134	0.020*	2.326
H6b CU → L	0.661	0.000*	7.912	0.495	0.000*	7.465

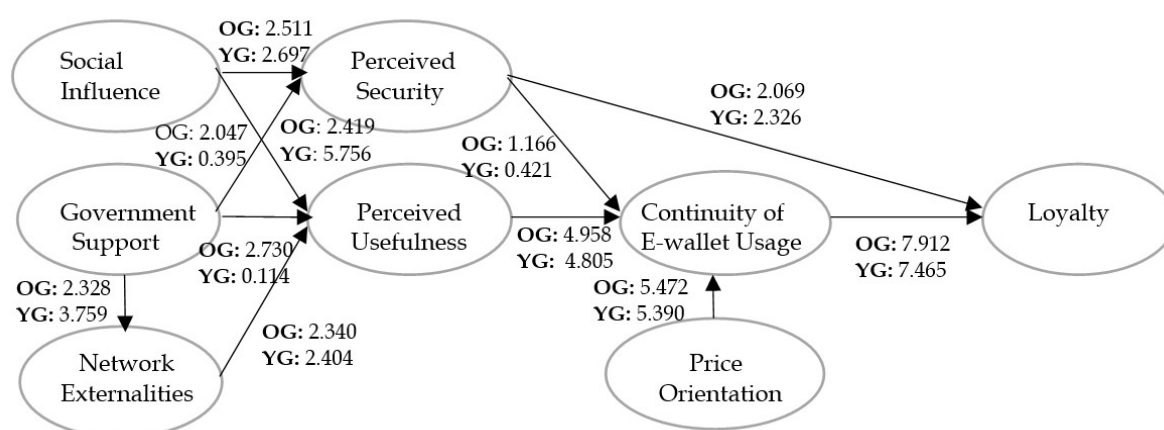*significant at p<0.05, t-statistic>1.96*

Figure 2. Path analysis

Based on the survey, it was found that government support has different impacts on both generations. These external factors were hypothesized to have an effect on customer perception in the form of security and usefulness. Nonetheless, the result is quite contradictory for both generations. From the older generation, government support is associated with increased perceived security, usefulness, and impacts on broader network externalities. On the contrary, government support did not significantly influence the perceived security and usefulness for the young generation, which was shown from H1a and H1b were not supported. This finding is in line with the FGD result. The result shows that the security and usefulness of each service depend on the provider itself rather than the government who manages it. The young generation that uses e-wallet services to pay online food delivery or shopping payment (Ipsos, 2020) does not value the government's influence in this service's usefulness.

Other digital payment services, such as m-banking, were mentioned earlier in the FGD. They seem preferable to use in government service payment. On the contrary, the regulation does not guarantee user safety; this is confirmed by the case of data leakage of BPJS users, which makes the level of user trust in digital data security decreases (Ramadhan, 2021). For the young generation, the path coefficient even got a minus score, showing how the increased rate of Government support directly negatively influences perceived security. Therefore, the role of government relies on controlling the regulation that impacts the e-wallet business process and makes many merchants involved using this service. In the end, this statement also aligned with the Hypothesis H1c that supported for both generations. The government support may take the form of clear regulations, involvement of government

payment that used e-wallet (such as for paying the electrical bill or water bill). Thus, to attract this generation's intention, government involvement has a significant impact. Exposure to this service, such as a community service ad or placing the advertising in the public area, can attract their interest and make them realize the benefit they can take from it.

Moreover, in the context of social influence, the young and older generations tend to believe their peers or family makes them believe the e-wallet they use provides safe and useful. These findings align with Purani et al. (2019), who stated that peers significantly influence their beliefs and behavior, even while forming loyalty. Hence, hypotheses H2a and H2b related to social influence have the same assessments for both generations. Even though there are slight differences between the generations, this finding was supported by Yang et al. (2021) stated that social influence affects consumer mindset emotionally and logically perspectives.

Nonetheless, both generations did not support the H4a hypothesis that indicates perceived security associated with continuance usage of e-wallet. This finding is in line with the previous research (Singh & Srivastava, 2020; Teng & Khong, 2021; Zhang et al., 2019). They also found that security was essential and mandatory for each e-wallet service providers to fulfill. Lack of a security system can make the customers from both generations not feel secure and disloyal. Thus, the continuance usage was influenced by the e-wallet usefulness, as shown by the H4b hypothesis supported by both generations. However, this finding did not immediately interpret that perceived security is not essential.

The usefulness of e-wallet has become an essential issue for increasing the continuance of e-wallet in the form of network externalities as H3 supported in both generations. Network externalities

associated with the perceived usefulness that influence the continuance usage of this service, shown by supported H3. This finding supported prior studies (Dahlberg et al., 2015; Yang et al., 2021)that ranked the top factors influencing e-wallet adoption, then stated usefulness and security positioned in second and fourth rank. Essentially, the continuance usage is associated with loyalty, confirmed by H6b that supported both generations.

On the contrary, price orientation is also important to be associated with continuance usage, as shown in H5 that supported both generations. This finding is in line with empirical evidence through FGD and other studies (Dharmasaputra, 2020; Vana et al., 2018), where most customers' considered the benefit of price, either in cash back or direct discount, while being loyal toward certain services.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

Understanding consumer behavior is crucial because every aspect, from personal factors such as age to the service industry can influence the behavior. Based on the research findings, it shows that both generations have different behavior while facing and dealing with external influence. On the one hand, the older generation tends to find government support makes them believe the particular e-wallet provider is beneficial and guarantees safety. On the other hand, young generation perspectives see government support as the actor that can make the network externalities wider by simplifying the regulation for the service providers. They tend to believe the influence of their peers or family members that, in the end, make them think that the service is safe and beneficial for them. Even though each generation uses this service for benefit, the young generation tends to believe in people they know personally. However, to attract this generation, it is advisable for increasing the trust in relation to the security that should also be increased by the government. This can be done such as by giving layered security procedures regulation that each provider should fulfill as their minimal security requirements.

From this research finding, the network externalities and price become the main issue that each generation considers for the continuance of usage both directly or indirectly. *This result* suggests *the importance of e-wallet service providers that they should expand the network and collaborate with various actors to retain customers.* Moreover, price in many forms, either cash back, giving loyalty point, or direct discount that should be carefully considered

as mentioned this become a sensitive issue. The e-wallet service provider can expose this service from the closest unit, such as introducing the service in the workplace or university that makes them realize this service exists and is beneficial. Furthermore, collaborating with the young generation's favorite services (such as subscribed online streaming, daily transportation, or game online) can make this generation aware of the usefulness of this service, fulfill their need, and ease their activity.

Theoretically, this research contributes to the body of knowledge about customer behavior, especially in the e-wallet service context, by comparing the case from different generation perspectives and confirming several factors that already exist in the previous studies. However, for managerial implications, this research contributes to providing information for the decision-maker actor –whether the policymaker, government, or e-wallet provider- should consider this issue while encouraging people to use this service.

Even though this research contributes both managerially and theoretically, some limitations can still be improved for future research. This study only focuses on three general external factors: social influence, government support, and network externalities. The discussion is quite broad and not discussed in depth. Future studies can choose to explain the particular external factor and discuss it intensely. Other limitations in this research might be provided by some hypotheses that are not supported, such as government support and perceived security.

REFERENCES

Abu-alhaija, A. S., Nerina, R., Yusof, R., Hashim, H., & Jaharuddin, N. S. (2018). Determinants of customer loyalty: A review and future directions. *Australian Journal of Basic and Applied Sciences*, 12(7), 106–111.

Acheampong, P., Zhiwen, L., Hiran, K. K., Serwaa, O. E., Boateng, F., & Bediako, I. A. (2018). Examining the intervening role of age and gender on mobile payment acceptancein Ghan: UTAUT model. C*anadian Journal of Applied Science and Technology*,6(1), 141–151.

Aji, H. M., Berakon, I., & Husin, M. (2020). COVID-19 and e-wallet usage intention : A multigroup analysis between Indonesia and Malaysia COVID-19. *Cogent Business & Management*, 7(1), 1804181

Amelia, F.& Fikriyah, K. (2020). Hubungan promo cashback terhadap loyalitas pelanggan muslim surabaya dalam pelayanan digital. J*urnal*

Ekonomika Dan Bisnis Islam, 3(2), 108–115.

Appiah, K., Osei, C., Selassie, H., & Osabutey, E. (2019). The role of government and the international competitiveness of SMEs: Evidence from Ghanaian non-traditional exports. *Critical Perspectives on International Business*, 15(4), 296–322.

Arpaci, I., Yardimci Cetin, Y., & Turetken, O. (2015). Impact of perceived security on organizational adoption of smartphones. *Cyberpsychology, Behavior, and Social Networking*, 18(10), 602–608.

Balakrishnan, V.& Shuib, N. L. M. (2021). Drivers and inhibitors for digital payment adoption using the cashless society readiness-adoption model in Malaysia. *Technology in Society*, 65(February), 101554.

Bank Indonesia. (2020). Ada Virus Corona, BI imbau masyarakat gunakan transaksi nontunai. *Kompas*. https://money.kompas.com/read/2020/03/24/182659926/ada-virus-corona-bi-imbau-masyarakat-gunakan-transaksi-nontunai

Bhattacherjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. *MIS Quarterly*,25(3), 351–370.

Catriana, E. (2020). Milenial Vs generasi Z, mana yang lebih suka pakai dompet digital? *Kompas*. https://money.kompas.com/read/2020/02/13/065600026/milenial-dan-generasi-z-mana-yang-lebih-suka-pakai-dompet-digital-

Chawla, D. & Joshi, H. (2019). Consumer attitude and intention to adopt mobile wallet in India – An empirical study. *International Journal of Bank Marketing*, 37(7), 1590–1618.

Cheng, Y. M. (2020). Why do customers intend to continue using internet-based sharing economy service platforms? Roles of network externality and service quality. *Journal of Asia Business Studies*, 15(1), 128-152.

Chua, B., Lee, S., Goh, B., & Han, H. (2015). Impacts of cruise service quality and price on vacationers ' cruise experience : Moderating role of price sensitivity. *International Journal of Hospitality Managemen*t, 44, 131–145.

Chung, J. H.& Yoo, T. H. (2015). Government policy, network externalities and mobile telecommunication services: evidence from OECD countries. *Applied Economics*, 47(21), 2173-2183.

Cugno, M., Castagnoli, R., & Büchi, G. (2021). Openness to Industry 4 . 0 and performance : The impact of barriers and incentives. *Technological Forecasting & Social Chang*e,

168(March), 120756.

Dahlberg, T., Guo, J., & Ondrus, J. (2015). Electronic commerce research and applications: A critical review of mobile payment research. *Electronic Commerce Research and Applications*, 14(5), 265–284.

Dawi, N. M. (2019). Factors influencing consumers intention to use QR code mobile payment – A proposed framework. *International Journal of Recent Technology and Engineering*, 8(2), 114–120.

Dharmasaputra, K. (2020). Bos OVO : Promo Cashback dongkrak penjualan 20-30 persen - *Finansial Bisnis*. *Bisnis.Com*. https://finansial.bisnis.com/read/20201002/563/1299769/bos-ovo-promo-cashback-dongkrak-penjualan-20-30-persen

Evandio, A. (2020). Dompet digital jadi pelumas pemulihan ekonomi. *Finansial Bisnis*. https://finansial.bisnis.com/read/20200902/563/1286504/dompet-digital-jadi-pelumas-pemulihan-ekonomi

Faryabi, M., Sadeghzadeh, K., & Zakeri, A. (2015). The relationship continuity model and customer loyalty in the banking industry: A case study of the Maskan Bank of Iran. *Journal of Relationship Marketing*, 14(1), 37-52.

Fedorko, I., Bacik, R., & Gavurova, B. (2021). Effort expectancy and social influence factors as main determinants of performance expectancy using electronic banking. *Banks and Bank Systems*, 16(2), 27–37.

Felix, W. (2019). Does generation X intend to use e-wallet in daily transactions? *TIMES-ICON 2019 - 2019 4th Technology Innovation Management and Engineering Science International Conference*, 1–5.

Fianto, B. A., Gan, C., Widiastuti, T., & Sukmana, R. (2020). Customer loyalty to Islamic banks: Evidence from Indonesia. *Cogent Business and Management*, 7(1), 1–28.

Fourtane, S. (2019). Sweden: How to live in the world's first cashless society. In Interesting Engineering (pp. 1–13). https://interestingengineering.com/sweden-how-to-live-in-the-worlds-first-cashless-society

Frey, W. H. (2018). The millennial generation: A demographic bridge to America's diverse future (Issue January). *Metropolitan Policy Program at Brookings*.

Gundaniya, N. (2020). Why eWallets are more popular in developing countries? *Digipay.Guru*. https://www.digipay.guru/blog/ewallets-are-more-popular-developing-countries/

Gurău, C. (2012). A life-stage analysis of consumer loyalty profile: Comparing generation X and

millennial consumers. *Journal of Consumer Marketing*, 29(2), 103–113.

Gvili, Y. & Levy, S. (2021). Consumer engagement in sharing brand-related information on social commerce: the roles of culture and experience. *Journal of Marketing Communications*, 27(1), 53–68.

Hagos, M. M. & Singh, S. (2019). Adoption of mobile banking technology in pastoral community: A perception based study in afar regional state, Ethiopia. *International Journal of Innovative Technology and Exploring Engineering*, 8(7C), 49–59.

Hair, J., Black, W., Babin, B., & Anderson, R. (2014). *Multivariate data analysis* (7th ed.). Pearson Education Limited.

Huang, D., Markovitch, D. G., & Ying, Y. (2017). Social learning and network externalities in decision making. *European Journal of Marketing*, 51(1), 157–176.

IDN. (2020). Indonesia millennial report. *IDN Research Institute*, 01, 61. https://www.idntimes.com/indonesiamillenn ialreport2019

Ipsos. (2020). The Evolution of the digital wallet: driving the next wave of growth. 1–8. https://www.ipsos.com/en-id/ipsos-media-conference-strategi-menang-tanpa-bakar-uang

IPSOS. (2020). Studi : 68 persen pengguna dompet digital adalah milenial. *Kompas*. https://money.kompas.com/read/2020/02/1 2/131300826/studi--68-persen-pengguna-dompet-digital-adalah-milenial

Jiang, L., Jun, M., & Yang, Z. (2016). Customer-perceived value and loyalty: how do key service quality dimensions matter in the context of B2C e-commerce?. *Service Business*, 10(2), 301-317.

Katz, M. L., Shapiro, C., American, T., Review, E., & Jun, N. (1985). Network Externalities: Competition and Compatibility. *The American Economic Review*, 75(3), 424–440.

Keisidou, E., Sarigiannidis, L., & Maditinos, D. (2011). Consumer characteristics and their effect on accepting online shopping, in the context of different product types. *International Journal of Business Science and Applied Management*, 6(2), 31–51.

Kim, H., Xu, Y., & Gupta, S. (2012). Electronic commerce research and applications: Which is more important in internet shopping, perceived price or trust ? *Electronic Commerce Research and Applications*, 11(3), 241–252.

Kirmani, A., & Ferraro, R. (2017). 23 CHAPTER Social Influence in Marketing: How Other People Influence Consumer Information Processing and Decision Making. *The Oxford Handbook of Social Influence*, 415.

Kompas. (2020). Lolos prakerja harus menautkan rekening atau e-wallet, ini caranya. *Kompas*. https://money.kompas.com/read/2020/05/1 1/203000326/agar-insentif-kartu-prakerja-cair-nik-di-akun-dan-rekening-e-wallet-harus-sama

Kumar, A., Adlakaha, A., & Mukherjee, K. (2018). The effect of perceived security and grievance redressal on continuance intention to use M-wallets in a developing country. *International Journal of Bank Marketing*, 36(7), 1170–1189.

Kustono, A. S., Nanggala, A. Y. A., & Mas'ud, I. (2020). Determinants of the use of e-wallet for transaction payment among college students. *Journal of Economics, Business, & Accountancy Ventura*, 23(1), 85–95.

Leong, L., Hew, T., Ooi, K., & Wei, J. (2020). Predicting mobile wallet resistance : A two-staged structural equation modeling-artificial neural network approach. *International Journal of Information Management*, 51(December 2019), 102047.

Li, S. (2021). How Does COVID-19 Speed the digital transformation of business processes and customer experiences? *Review of Business*, 41(1), 1–14.

Lin, W.-R., Yang, F.-J., Chang, Y.-H., W-r, L., F-j, Y., & Y-h, C. (2020). The Impact of risk factors and attitudes on use mobile payment intention. *Finance & Management Strategy*, 15(1), 129–158.

Moorthy, K., Ling, C. S., Fatt, Y. W., Yee, C. M., Chong, E., Yin, K., Yee, K. S., & Wei, L. K. (2017). Barriers of mobile commerce adoption intention: Perceptions of generation X in Malaysia. *Journal of Theoretical and Applied Electronic Commerce Research*, 12(2), 37-53.

Nafees, L., Cook, C. M., Nikolov, A. N., & Stoddard, J. E. (2021). Can social media influencer (SMI) power influence consumer brand attitudes? The mediating role of perceived SMI credibility. *Digital Business*, 1(2), 100008.

Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-jabir, A., Iosifidis, C., Agha, M., & Agha, R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *International Journal of Surgery*, 78(April), 185–193.

Oliver, R. L. (1999). Whence consumer loyalty? *Journal of Marketing*, 63(SUPPL.), 33–44.

Pal, R. & Bhadada, S. (2020). Cash, currency and COVID-19. *Postgraduate Medical Journal*, May. 96(1137), 427-42

Patel, K. J. & Patel, H. J. (2018). Adoption of internet banking services in Gujarat: An extension of TAM with perceived security and social influence. *International Journal of Bank Marketing*, 36(1), 147–169.

Pertiwi, D., Suprapto, W., & Pratama, E. (2020). Perceived Usage of e-wallet among the Y generation in Surabaya based on technology acceptance model. *Jurnal Teknik Industri*, 22(1), 17–24.

Pizzi, G., Scarpi, D., Pichierri, M., & Vannucci, V. (2019). Virtual reality, real reactions?: Comparing consumers' perceptions and shopping orientation across physical and virtual-reality retail stores. *Computers in Human Behavior*, 96(July 2018), 1–12.

Purani, K., Kumar, D. S., & Sahadev, S. (2019). e-Loyalty among millennials: Personal characteristics and social influences. *Journal of Retailing and Consumer Services*, 48(July 2018), 215–223.

Qasim, H.& Abu-shanab, E. (2016). Drivers of mobile payment acceptance : The impact of network externalities. *Information Systems Frontiers*, 1021–1034.

Rahman, M., Ismail, I., & Bahri, S. (2020). Analysing consumer adoption of cashless payment in Malaysia. *Digital Business*, 1(1), 100004.

Ramadhan, A. (2021). Kasus kebocoran data, kepercayaan terhadap BPJS kesehatan dikhawatirkan turun. *Kompas*. https://nasional.kompas.com/read/2021/05/24/09312931/kasus-kebocoran-data-kepercayaan-terhadap-bpjs-kesehatan-dikhawatirkan-turun?page=all

Rapyd. (2020). Alat pembayaran e-wallet geser posisi kartu debit, ovo di peringkat pertama. *Bisnis.Com*. https://finansial.bisnis.com/read/20200612/90/1251862/alat-pembayaran-e-wallet-geser-posisi-kartu-debit-ovo-di-peringkat-pertama

Russo, C., Ghezzi, C. M., Fiamengo, G., & Benedetti, M. (2014). Benefits sought by citizens in multichannel e-government payment services: Evidence from Italy. *Procedia - Social and Behavioral Sciences*, 109, 1261–1276.

Sánchez-torres, J. A., Canada, F. A., & Sandoval, A. V. (2017). E-banking in Colombia: factors favouring its acceptance , online trust and government support. *International Journal of Bank Marketing*, 36(1), 170-183.

Singh, S., & Srivastava, R. K. (2020). Understanding the intention to use mobile banking by existing online banking customers: an empirical study.

Journal of Financial Services Marketing, 25(3–4), 86–96.

Slade, E., Williams, M., Dwivedi, Y., & Piercy, N. (2015). Exploring consumer adoption of proximity mobile payments. *Journal of Strategic Marketing*, 23(3), 209–223.

Smith, J. R., Louis, W. R., & Schultz, P. W. (2011). Introduction: Social influence in action. *Group Processes and Intergroup Relations*, 14(5), 599–603.

Smith, S. S. (2020). Digital payment are here to stay. *Strategic Finance*, December, 60–62.

Song, M., Parry, M. E., & Kawakami, T. (2009). Incorporating network externalities into the technology acceptance model. *The Journal of Product Innovation Management*, 16653032, 291–307.

Teigland, R., Siri, S., Larsson, A., Puertas, A. M., & … (2018). *The rise and development of fintech: accounts of disruption from sweden and beyond*. In Routledge.

Teng, S. & Khong, K. W. (2021). Examining actual consumer usage of E-wallet: A case study of big data analytics. *Computers in Human Behavior*, 121(October 2020), 106778.

To, A. T. & Trinh, T. H. M. (2021). Understanding behavioral intention to use mobile wallets in vietnam: Extending the tam model with trust and enjoyment. *Cogent Business and Management*, 8(1), 1891661.

Tsiotsou, R. H., & Wirtz, J. (2015). The three-stage model of service consumption. *Handbook of Service Business: Management, Marketing, Innovation and Internationalisation*, January 2015, 105–129.

Tunçgenç, B., El Zein, M., Sulik, J., Newson, M., Zhao, Y., Dezecache, G., & Deroy, O. (2021). Social influence matters: We follow pandemic guidelines most when our close circle does. *British Journal of Psychology*, 1–19.

Uddin, M. B. (2019). Customer loyalty in the fast food restaurants of Bangladesh. *British Food Journal*, 121(11), 2791–2808.

Valaei, N. & Nikhashemi, S. R. (2017). Generation y consumers ' buying behaviour in fashion apparel industry. *Journal of Fashion Marketing and Management*, 21(4), 523-543

Vana, P., Lambrecht, A., & Bertini, M. (2018). Cashback is cash forward: delaying a discount to entice future spending. *Journal of Marketing Research*, 55(6), 852–868.

Wei, M. F., Luh, Y. H., Huang, Y. H., & Chang, Y. C. (2021). Young generation's mobile payment adoption behavior: Analysis based on an extended UTAUT model. J*ournal of Theoretical*

and Applied Electronic Commerce Research, 16(4), 1–20.

Yang, M., Al Mamun, A., Mohiuddin, M., Nawi, N. C., & Zainol, N. R. (2021). Cashless transactions: A study on intention and adoption of e-wallets. *Sustainability* (Switzerland), 13(2), 1–18.

Youn, S., Chyung, Y., Roberts, K., & Hankinson, A. (2017). Evidence-based survey design: The use of a midpoint on the likert scale evidence-based survey design: *Boise State University Scholar Works*, 56, 15–23.

Yuan, S., Liu, L., Su, B., & Zhang, H. (2020). Electronic Commerce Research and Applications Determining the antecedents of mobile payment loyalty: Cognitive and affective perspectives. *Electronic Commerce Research and Applications*, 41, 100971.

Zainol, N. R. (2021). Cashless transactions: a study on intention and adoption of e-wallets. *Sustainability* (Switzerland), 13, 1–19.

Zhang, J., Luximon, Y., & Song, Y. (2019). The role of consumers' perceived security, perceived control, interface design features, and conscientiousness in continuous use of mobile payment services. *Sustainability* (Switzerland), 11(23), 6843.

Zhao, Y.& Bacao, F. (2021). How does the pandemic facilitate mobile payment? An investigation on users' perspective under the COVID-19 pandemic. I*nternational Journal of Environmental Research and Public Health*, 18(3), 1–22.

Zhou, T.& Lu, Y. (2011). Examining mobile instant messaging user loyalty from the perspectives of network externalities and flow experience. *Computers in Human Behavior*, 27(2), 883–889.