

Does Digital Payment Shift the People's Shopping Behaviour? Evidence in Yogyakarta



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ABSTRACT: Digitization has become something that is inherent in people shopping habits. This study proposed and tries to investigate whether the Industrial Revolution 4.0 has dominated people's shopping behaviour to electronic shopping (e-shopping), and to find out the factors influencing it. Using purposive sampling and supported by questionnaire instruments, the research takes Yogyakarta City as a case study, considering its relatively modern society and good in education. The results showed that the people prefer to conventional shopping, although online shopping will save the time and can be accessed at anywhere. The frequency of shopping online only 1-3 times a month on average, although 96% of respondents have an online shopping app. What's surprising is only 10-20% of their income which used for online shopping. Since 25% of their income is saved, it means that the proportion of income for offline shopping is between 55-65%. The people also more sure about the quality of goods in the offline market because they can see it directly. Overall, this study breaks the opinion that the Industrial Revolution 4.0 has changed people's shopping behaviour to online transaction.

KEYWORDS: Shopping Behaviour, online shopping, Industrial 4.0, Yogyakarta.

1. BACKGROUND

Industry 4.0 is currently receiving public attention because of the changes that have occurred. Born from the idea of the fourth industrial revolution. The European Parliament Research Service on Davis (2015) found that the Fourth Industrial Revolution is underway. Today, the emergence and diffusion of technology and innovation is increasingly crossing national borders and often as part of the emerging global innovative technology sector. (Wijaya, Grace, Candra, & Sidabutar, 2021). Industry 4.0 presents technology that can increase financial inclusion, which has so far been dominated by banks. With the emergence of payment systems other than physical payments, particularly digital payments, Bank Indonesia realized the importance of non-cash payment transactions in the economy. This has become the driving force for Bank Indonesia's policy to launch the National Non-Foreign Exchange Movement (GNNT) in 2014, so that it can transition from the era of cash to another era of cash which continues to be widely used today. Today's financial technology revolution is enabling cash and digital to merge in a variety of other innovative ways, and mobile payment become more popular increasingly because of the convenient and security (Dat, D. N.; Dinh, H. C, Nguyen, D. V, 2020). The existence of this movement is aimed encouraging people to conduct non-cash transactions. Among ASEAN countries, the use of cryptocurrency in Indonesia is still relatively low. Reference (Global Consumer Insight Survey, 2019) shows that Indonesia is lagging behind Thailand and Vietnam in terms of the highest mobile payment growth rate in 2019. Thailand grew 67%, Vietnam grew 61% and Indonesia only reached 47%.

However, the emergence of cryptocurrency is increasingly widespread, the people of Yogyakarta still prefer to use cash in payment transactions in their daily lives.. It can be seen through early observation in four big markets in Yogyakarta which is presented in Table.1.

Table 1. Early Observation in Four Big Markets in Yogyakarta

No.	Super Market	Observation (people)	Card Usage (%)	Cash Usage (%)
	Indogrosir	25	6	19
	Hypermart	25	10	15
	Superindo	25	9	16
	Mirota Godean	25	8	17
	Total	100	33	67

Source: field survey

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Based on Table 1, 67% of Yogyakarta residents still prefer to use cash over digital payments, indicating that digital payments have not been fully accepted by the public. There is agreement with the latest Access to Cash Review report by Ceeney (2019) released across the UK, which shows a decline in cash use, but most people are still dependent on cash and not ready to switch to digital payments. The report shows that 97% of UK residents carry cash with them and 85% keep cash in their homes. Although e-money provides convenience in purchasing goods and services, using e-money also carries risks because it is difficult to control spending.

The rapid development of technology requires the system to work efficiently fast, effective and practical, it creates a non-cash payment system innovation that can replace the cash payments (Lee & Lee, 2020). Meanwhile, the development of the internet has created financial technology innovations that facilitate public access to financial services (Diyya, 2017). Since the payment system is required to accommodate the transfer of funds quickly, safely, and efficiently, the payment system technology will be more rapid with various ease of transaction facilities (Ramadan, 2016). The ease of transacting using e-payment has contributed to the high public interest in using it (Rusmawan, 2018, Lin, (2011), Sebastian, 2020). Non-cash payments do not use cash but by transfer between banks and intra-banks. In addition, ATM cards, debit cards, electronic money, and mobile money can be used. Even mobile payments such as e-wallet are growing in facilitating online and offline transactions using only a QR code. The majority of payment systems currently use online communication with a network system and are highly dependent on infrastructure (Gupta, 2022).

Internet users in Indonesia continue to increase, this causes shifts and changes in various aspects of people's lives. One of them is that people's lifestyles are becoming more modern and practical, always wanting convenience for all their activities and can be done from home (Diyya, 2017). Consumption behavior of urban communities is very dynamic after the emergence of virtual markets or online shops, as a result, the structure of demand for goods has also changed. As a result, the demand for goods in non-virtual markets is decreasing, especially in shopping centers in several big cities (Kulkarni, 2020). In Indonesia, internet has become an important instrument in running a business and consumption because it provides great benefits. In 2021, there will be an increase in the e-commerce business to Rp. 337 trillion, compared to 2020, which increased from Rp. 205.5 trillion to Rp. 253 trillion. The high growth of e-commerce is motivated by the increasing use of the internet in Indonesia, and inseparable from the government policies in encouraging digital acceptance to the public, as well as continuing to accelerate the development of fintech and digital banking (Governor of Bank Indonesia, 2021). E-commerce has provided trillions of dollars in market opportunities and has changed the consumption patterns of the world's people (Yongqing, Yeming, Lesley, and Thomas, 2020). Even online shopping has contributed to economic growth and consumption, and it is targeted that online shopping through e-commerce platforms can contribute 18 percent of total household consumption growth in 2030. The household consumption component is by far the largest contributor to the rate of national economic growth. (Indonesia Ministry of Commerce, 2021).

The development of malls in Indian cities makes consumers have new shopping places besides traditional markets, plus the rapid development of malls such as air conditioning, places to eat and places to play, increasingly invites consumers to come. However, due to COVID-19, which forced malls to close, made changes to the shopping patterns of the people, where consumers buy food, drinks, clothes and so on from home (Ijraset, 2021). In contrast to Nigeria, increased Internet penetration does not increase online shopping because. Consumers are not interested in online shopping because they do not believe in the quality of online store products and people's low knowledge about e-tech (Asiedu, 2020). However, the industrial revolution 4.0 is a major contributor to the digitalization era. Its implications for sustainable development have received wide attention from the perspective of the triple bottom line, sustainable business models, and circular economy (Iqra Sadaf Khan, et al, 2021). Furthermore, Technological developments have also driven a steady trend of progress in the distribution and service industries (JiHyo, Yunseon & HakJun, 2021).

Relying on technological sophistication, online stores promise the convenience of shopping without having to leave home. Shopping can also be done from anywhere. The people don't need to go to the mall or the destination store, don't have to stop by a number of shops to find what they want (Kaur & Kaur, 2018). In addition, the people can shop online at any time, and also have access to a wider variety of products (Karimi, Papamichail & Holland, 2015). Although in recent years, the online shopping industry has really exploded, in fact many people will only buy new products online, but at the same time there are still many people who stick to regular shopping, and they have their reasons. Some people prefer offline shopping because they can check the quality of the products they want to purchase. Offline shopping is also really suitable for those of who want things to be in their hands immediately (Moon, 2021). If we shop online, sometimes the delivery will take a few days. This research is to determine whether the rapid industrial development in finance and business has shifted people's shopping behavior to online shopping.

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2. METHODOLOGY

2.1. Research Method

We propose to find out the shopping behaviour of Yogyakarta people in the 4.0 era. This research was done by quantitative descriptive approach and to achieve the goal of this research, we carried out primary data through survey. Questionnaire technique used for collecting information related to people's shopping behavior, and it is revealed whether there is a change in people's shopping behavior. Purposive sampling is used for choosing the proper respondents, namely those who usually shop online and offline, so the expected and fit answer was obtained. The sample size was calculated using the Slovin method with a margin of error of 5%. The validity and reliability of the research instrument were tested.

2.2. Measurement

Shopping technology facilities have developed very rapidly and sophisticatedly, which has made the world claim that online shopping dominates transactions compared to offline shopping. Focus of this research is on people's shopping behavior based on the factors that determine them in shopping online and offline. Some of the factors that are claimed to determine them in shopping online and offline are the proportion of income, shopping frequency, shopping applications they have, and happiness of offline shopping. To determine the factors that respondents use cash for transactions, linear regression is used as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e$$

Where:

Y = cash usage

X1 = manageable

b₁, b₂, b₃, b₄= regression coefficient

X2 = flexibility

b₀ = intercept

X3 = transaction volume

μ = error term

X4 = charge for non-cash

3. FINDING AND DISCUSSION

Online shopping actually started in the 1950s, before the internet was invented. This shopping trend is carried out by a Canadian entrepreneur Lawrence Freiman who owns a shop called Vis O Matic with a different concept from conventional stores, where shoppers cannot buy goods and then take them home. The seller asks the buyer to sit in a chair in front of the television, with a sophisticated device then the customer selects the desired item by flipping through and touching a button similar to today's online stores. After making a choice, the seller then sends the item to the customer's address (Law, Kwok, & Ng, 2016). Nowadays, the internet has indeed contributed to the transformation process and become an online transaction platform and provides an endless structure of market capabilities (Ha, 2020). Online transaction is the process of buying and selling goods or services via the internet, without meeting directly between the seller and the buyer (Academia, 2021).

The rapid development of technology and the internet has encouraged the development of e-commerce businesses in Indonesia including in Yogyakarta, and make businessman have to be adaptive to create strategies for their especially online business. Interestingly, up to now offline shopping is still favored by the people of Yogyakarta, even reaching 74.5%. Thus, proving that offline shopping is still in great demand and has not been displaced by online shopping. Furthermore, in this section, several facts are discussed that confirm that offline shopping is still an option for the people of Yogyakarta. Findings and implications are discussed as follows:

3.1. Apps Ownership

In this new era of smartphones, mobile applications have changed various aspects of human life, including shopping behavior. Recent statistics show that in 2017, smartphone penetration reached more than 50% of the world's population, and is expected to exceed 6.1 billion people by 2020 (Hsiao, Shu, and Huang 2017). This fact has confirmed the increasingly extensive use of smartphones, where mobile applications have made a major contribution to modern society (Tarute, Nikou, and Gatautis 2017). Although the application does not include a purchase feature, the application drives sales through public consumption due to the use of the application. Consumer use of mobile apps and other online platforms is just one factor that can affect purchases. In other hands, increased transactions using shopping applications because it supported by digital payment. Table.2. confirming the ownership of the online shopping application owned by respondents

Table 2. Respondent's Apps Ownership

Apps Ownership	Number of Respondent	Percentage
Yes	175	92%
No	25	8%

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Based on the data collected, 92% of respondents have an online shopping application, it's confirmed that 92% of respondents also own a smartphone, but the application is just to compare the prices. Respondents also stated that ownership of online shopping applications is due to following current trends and as a means of showing one's existence. Respondents acknowledged that transactions using shopping applications easier because of digital payments, and can be done in anytime and at anyplace. Respondents have an application because they can compare prices quickly and efficiently, and just including the price of the item they are looking for, items from various stores will appear. What's surprising is the respondents understand that there is a negative side to shopping applications, when discounted prices are high, consumers are attracted to shopping, so applications tend to make people consumptive.

Table.3. Applications tend to consumptive.

Mean	Median	Modus
4.08	4	5

The mean for the question of online shopping applications that have the potential for people to become consumptive is 4.08, meaning that respondents agree that online shopping applications tend to be more consumptive. The rise of online shopping platforms or online marketplaces is an inevitable impact of the industrial revolution 4.0 which pushes digital technology to become more disruptive. People can access the marketplace anywhere and anytime, not only for window shopping but also for buying (impulse buying).

3.2. Online shopping frequency

Although 95% of respondents have an online shopping application, it is not always used for transactions. Their online shopping frequency is only 1-3 times a month on average (see Table.2). This means that the people of Yogyakarta still like offline shopping even during the COVID-19 pandemic. Understandable because shopping offline and even using cash is manageable, within this research model are easy to control expenditure and find out the amount of expenditure.

Table 4. Frequency of online shopping in a month

Rank of frequency	Number of respondents	Percentage
Never	12	6%
1 – 3x a month	146	73%
4 – 7x a month	34	17%
More than 7x a month	8	4%
Total	200	100

Factors that can be regulated differ between the use of cash and non-cash in managing money, and the use of online shopping applications can encourage consumptive behavior, according to Jati (2015). This statement is also supported by Soman (2018), who explains that consumers who use debit cards are more likely to buy unnecessary and unplanned items because they do not experience an immediate loss of money, so their expenses are out of control. In addition, consumers who use credit cards tend to ignore the amount of money they spend, so there is a tendency to overspend. Table 5 below strengthens the reasons for using cash in shopping.

Table 5. Reasons to use cash.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	
	B	Std. Error	Beta			
1	(Constant)	7.444	1.699		4.383	.000
	Manageable	.034	.157	.022	-.216	.030
	Flexibility	.121	.132	.105	.916	.042
	Transaction Volume	.432	.212	.216	2.035	.045
	No Transaction Fees	.256	.081	.318	3.160	.002

The frequency of online shopping is relatively rare because respondents feel that in offline store they can do physical bargaining with the sellers unlike in online shopping. In online shopping, customers cannot bargain because the price of the product is fixed, so they feel that online shopping is more expensive than the offline market. In off-line shopping customer can move one place to

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another and one shop to another in search of their desired product. In addition, respondents are satisfied because in the offline store service offered is better because the questions and complaints of consumers can be immediately resolved (Moon, 2021)

Thus, it can be concluded that people who make purchases with offline transactions tend to use cash they take from ATMs and do not consider their spending management when shopping to meet their needs. Transaction volume is also a significant reason why the people of Yogyakarta use offline payments with cash, as stated by Lloyd (2016) and Bagnall (2014). Simonson (1990) said that the number of purchases affects the product chosen by consumers, and when the transaction volume is lower, consumers prefer to use cash payments rather than digital payments which are preferred when the transaction volume is higher (Lloyd et al., 2016). The number of purchases also affects the tendency of consumers to use cash (O'Brien, 2014). For example, the probability of using cash increases to 91% when transactions are less than \$20, but decreases to 57% when transactions are larger than \$20. This finding is consistent with the study by Bagnall et al. (2014).

Table.6. Choose online or Offline Shopping

Mean	Median	Modus
3.13	3	3

From the results of the question instrument choosing online or offline shopping, it shows that the median is 3, the score means "neutral" where respondents do not only or do not even choose to shop online. Transactions using cash provide a lot of convenience for consumers when shopping. Related result by (Rosano, 2018) stated that cash is flexible because it is easy to use which does not require about account or device by either party to complete transaction. This shows that consumers who rate cash high with regard to ease of use conduct more cash transactions.

3.3. Proportion of income for online shopping

Respondents admit that there are many conveniences in online shopping that make people more consumptive, but the proportion of income spent on online shopping is only 10-30%. This means that the proportion of income used for offline shopping is much larger or around 55-65%, assuming 25% of people's income is saved as a precaution. Table 3. confirms the research findings. The small proportion of income for online shopping is due to several reasons; to buy not basic needs, can't see directly the goods so that the respondents tend not to believe in the quality of goods in the online market, pay shipping costs, even though many e-commerce provide free shipping but there are terms and conditions to get them, so that people prefer to take the time to buy goods offline, and the goods cannot be accepted immediately because they must be sent which can take a long time.

Table.7. Income Proportion used for online shopping.

Income Proportion/month	Number of respondent	Percentage
0%	14	7%
10% – 20%	144	72%
20% – 30%	30	15%
50%	8	4%
> 50%	4	2%
Total	200	100

The online shopping experience often leads people to agree that the products they receive do not always match the size or color they want. Sometimes, the product image seen online is different from the product that was delivered. On the other hand, when shopping offline, one can confirm the size, color, defects and so on. Shopping offline provides a more authentic experience than shopping online. While buying a product offline, one can feel its texture and get to know how it tastes like. We can also ensure exactly what we buy when shopping offline. However, when shopping online, we cannot always be sure of the product we are buying because the images we see on websites are not always the same as the products we receive.

Digital payment breakthroughs have indeed increased very rapidly in the era of industry 4.0. Starting from electronic money, mobile payments, to financial technology, where people can make transactions without having to meet. However, the facts show that offline shopping is still in demand by the people because digital payment systems depend on good connectivity where no connection means no payment. Infrastructure is a real barrier to digital payments. Likewise, many people still cannot rely on cards and digital as the only means of payment (Ceeney, 2019). Thanks to offline stores, the payment system is also safer and faster. As shown in Table 5 above, the non-cash payment factor is the reason respondents use cash for transactions. This is because charging additional fees from the total cost of the purchase is not really in the use of cash. The results obtained from this

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study support previous research by Arango (2013), who found that different incentives, such as the relative cost of cards and ATM withdrawal fees, are the main factors explaining why Cash always occupies the top position in investment portfolios. in many developed countries. With regard to the results (Rosano, 2018) states that cash is flexible because it is easy to use and does not require an account or device for one of the parties to transact. We understand that many e-commerce or banks that burden consumers with transaction costs even if they only buy credit. It is similar when consumers withdraw money from ATM machines in different banks.

3.4. The happiness of offline shopping

Shopping enjoyment is the consumer's attitude towards activities using a certain system that is considered to provide its own pleasure and happiness, (Shen, 2012). Shopping has always been considered a gathering and social interaction where people meet and have fun with their friends. The respondents claimed that humans as social beings will feel happy to gather or unwind by traveling to shopping centers (markets, malls and so on) so that online markets do not affect people's habits of visiting shopping places. Especially when there will be big celebrations such as Eid, Christmas and Otherwise, shopping places will be full of visitors. Finally, shopping at the store can be a social activity that can make friendships closer.

For the respondents, shopping at the market or offline stores gives their own happiness because they can relax, reunite with friends, talk at the food court, and so on. Respondents feel satisfied when shopping offline with other people such as parents or friends because it will strengthen bonds with each other. When shopping together, we will give each other opinions and can also laugh at funny things together. The bargaining process is also a fun thing in offline shopping. When there was an agreement on the price of the bargain, they felt very happy and satisfied.

Table 8. Happiness of Offline Shopping

Mean	Median	Modus
4.1	4	5

The mean from the table above regarding the statement that offline shopping is more fun is 4.1, so respondents agree that there is a distinct pleasure from shopping offline. Even though people say that digitalization will shift from offline to online, people still stick with offline shopping. Merchants also acknowledged that due to the pandemic, the online shopping system has reduced consumers and their income, but it has not eliminated consumers' interest in continuing to shop offline, visiting shops and food stalls.

4. CONCLUSION

The rise of online shopping platforms or online marketplaces is an inevitable impact of the industrial revolution 4.0 which pushes digital technology to become more disruptive. This study proposed and tries to investigate whether the Industrial Revolution 4.0 has dominated people's shopping behavior to electronic shopping (e-shopping), and to find out the factors influencing it. Based on the results of the analysis and discussion presented in the previous chapter, the conclusions can be taken as follows:

- Although most of the respondents have online shopping applications, they still more often do offline shopping for household needs and daily needs, while online shopping is only to fulfill non-essential goods. Respondents are more confident in the quality of goods in the offline market because they can touch, see goods, and even try directly. In addition, respondents stated that ownership of shopping applications is only because they follow trends, and as a means to show their existence.
- Until now, respondents still prefer offline shopping than online shopping. This can be seen from their online shopping frequency, which is only 1-3 times a month on average and the income used for online shopping is only around 10-30%, which means that most of their income is spent on offline shopping, of course with the implementation of health protocols. If online shopping is very prone to fraud, offline shopping can minimize this possibility, because the goods we buy are directly in our hands when the money is paid.
- Offline shopping for some people also provides its own happiness because it can interact directly with other people, friends, and sellers through bargaining for the price of goods. When there was an agreement on the price of the bargain, they felt very happy and satisfied. Besides relieving stress, there is a certain kind of happiness that comes from shopping offline. That is why, even though the COVID-19 pandemic is still ongoing, many traders are still selling and serving offline transactions.
- Online shopping can be accessed easily and quickly so it can save time, but the quality of goods in the offline market is more reliable than in the online market. Offline shopping is still in demand by the people because digital payment systems depend on good connectivity where no connection means no payment. Infrastructure is truly a barrier to digital payments. In the end,

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there is a tendency for online shopping to become more and more popular, but also that ordinary stores are not going anywhere. Thus, online shopping will not be able to shift or replace offline shopping.

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