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An Exploratory Study: Comparative Analysis of E-commerce Payment Systems in Developed and Developing Countries

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Abstract: *A variety of technologies are reshaping how developed and developing countries shop online. Developing countries have slow or nonexistent economic growth Meanwhile, Developed countries have the opposite. Consumer spending in a country has a high relationship with economic growth. This study aim to compare the key differences and similarities between Indonesian and Netherlands e-commerce shopping behavior and the difference between e-commerce payment systems to get the recommendation regarding access payment systems of e-commerce that can be applied in developing countries. The research employs a qualitative approach with exploratory research design and the data collection method used is semi-structured interviews. The findings through interviews with 14 Netherlands users, 7 Indonesia user, and 1 informant from Indonesia e-commerce confirm that the e-commerce payment system has a relationship with shopping behavior.*

Keywords: *e-commerce payment system, developed countries, developing countries*

I. INTRODUCTION

Nowadays customers often purchase online products through e-commerce payment on mobile phones. The E-commerce Payment system is a technology system that provides a payment method through an electronic device when purchasing goods or services [1]. However, the big differences are for developed countries transactions are seamless, fast, and most consumers use multiple credit for online transactions and secure transactions, for example, e-commerce platforms with integrated payment systems in mobile phones. Meanwhile, developing countries prefer cash-based methods and local payment solutions like cash on delivery and manual payment due to the level of distrust in online payment and lower levels of digital literacy and unfamiliarity with online payment methods. These makes developed and developing countries have an enormous gap in economic growth productivity, one of them due to different levels of consumer spending. Based on Keynesian Economics theory, there is a significant relationship between consumer spending and economic growth. Two concepts explain the importance of consumer spending can have positive effects on economic growth, the first concept is the consumption function determines the increase in income leads to an increase in consumption and the second concept is a multiplier effect, an initial increase in consumer spending can lead to a multiplied increase in total economic output [2].

Many phenomena that show the relationship between mobile payment in online shopping influencing consumers to spend more. The study found online transactions are easy to impulse purchase due to promotion and website quality, as well as credit cards indirectly influence impulse spending [3]. The effectiveness of the advanced access payment process persuades people to become impulsive. There are three components of consumer impulsive behavior which are individual, situation, and sensory, the situation can also be understood as time [4].

The shorter the time process of shopping the more impulsive the consumer which leads to high consumer spending that influences economic growth. Based on consumer purchase behavior research for offline stores, the average time for consumers to make an impulsive purchase is less than 13 seconds. On the other hand,

the average online consumer spends 19 seconds making a purchase. If a consumer spends more than 20 seconds during the shopping process, they are less likely to make an impulsive purchase, as they are putting more thought into it [5]. The time taken for impulsive purchases underscores the pivotal role of influencing high consumer spending.

The reason the author chose Indonesia as a representative developing country and the Netherlands as a developed country is due to several reasons, including the enormous gap in total In 2022, the Netherlands witnessed over $36 billion spent in e-commerce by just 13.9 million shoppers. Also, the Netherlands has one of the highest shares of e-commerce shoppers in Europe with 91% of the population engaging in online shopping. On the other hand, in 2022 Indonesia had 159 million of active online shoppers but only totaled with $20,41 billion in e-money transactions. Also, Indonesia is the number one contributor of Southeast Asia's e-commerce market for 52% of the total gross merchandise value (GMV) which categorized Indonesia as having a tendency to do online shopping. This striking difference emphasizes the gap in consumer spending between the two countries. Especially when considering the Netherlands has just 17.7 million people compared to Indonesia's massive 275.5 million [6]. The access payment system in Indonesia is lengthy and primarily manual. The total time taken for the payment process is up to 50 seconds. On the contrary, in the Netherlands, the payment process is automatic and extremely rapid, under 11 seconds.

II. METHODOLOGY

The specific actions to be undertaken in this research are structured as follows:
- Preliminary Research: the initial research is to collect insight and validate whether Indonesia has experienced any issues with the access payment system applied in Indonesia, using pilot test
- Primary research:
  1. Data Collection: Conducting interviews with the participants criteria of iDEAL or Apple Pay as the Netherlands e-commerce payment user and Virtual Account Billing, QRIS, or Top up as the Indonesian e-commerce payment user, using purposive sampling to select the participants. To validate the data, the researcher interviewed with internal company members of Indonesia's e-commerce.
  2. Data Analysis: analyzed using open, selective, and axial coding through NVIVO as a tools
  3. Reliability and Validation: Lincoln & Guba in 1985 mentioned four criteria to validate the common data in qualitative research. The four criteria consist of credibility, transferability, dependability, and confirmability [7]. In the credibility steps, the researcher uses data triangulation.

III. ANALYSIS AND RESULTS

The interview was conducted with 14 Netherlands users that have different nationalities and 7 Indonesia users.

The researcher categorized the gathered data into four groups to validate using data triangulation from data from Netherland users, Indonesian Users, Previous studies, and dara from internal informants of e-commerce payment:

1) User Behavior in Payment

The research findings found the significant difference for Indonesian and Netherlands users is from the payment page behavior. Netherlands users never stop at the payment page because they are afraid will forget what to purchase and claim to have tendency of impulsivity, while Indonesian user stop because of dissatisfied with the payment system and self-report as not impulsive buyers. Indonesian users are categorized as seeking for value benefits, for example, rewards, free delivery, or the lowest fees charged. Moreover, the Netherlands felt satisfied because feel safe which impacted the feeling of spending too much. The similarity between two countries is they still need two types of stores, online and offline store.. Even Though, Indonesia tends to prefer online shopping more.

2) User Perceptions in Payment

Expectations for future payment systems reflect the current condition of the payment system, Netherlands user has high expectations that not even exist yet. On the other hand, the expectation of Indonesian user of the payment system is low or has already been applied

in another **c**ountry for a long time ago. Netherlands user felt satisfied with the payment system. While Indonesian user never felt satisfied.

　　3)　User Choices and Preferences in Payment

　　The significant difference between Indonesian and Netherlands users is the variety of e-commerce that they use. Most Netherlands users purchase items from websites that occur when they search the items or the most famous one is Zalando, they don't notice the difference, while Indonesian users have a preference and always buy from the mentioned platforms only because of the looks of platforms. Moreover, the difference in payment platform strategies in Indonesia and the Netherlands is that the Netherlands focuses on encouraging consumer spending through a fast payment system while Indonesian platforms compete to offer the lowest fees or rewards.

　　4)　User Interaction and Preferences in Payment

　　Both Indonesian and Netherlands users prefer to find items from the search bar compared to the algorithm. The budget per click or cost per click (CPC) is higher when using search bar than the algorithm. Also, both countries consider and judge platforms through website aesthetics rather than website security.

Table 1.
Netherlands Coding Result

Name	Subtopic	Sources	References
Payment Page Behavior	Never stop on payment page	6	6
	Stop at the payment page	1	1
	Stop on shopping cart	0	0
Shopping Behavior	Impulsive	13	18
	Instant Decision	5	7
	automatic payment	7	12
	Not Impulsive	3	3
Satisfaction with the Payment System	Satisfied	10	16
	Dissatisfied	0	0
	Excessive Effort	1	1
	Neutral	0	0

Table 2.
Indonesian Coding Result

Name	Subtopic	Sources	References
Payment Page Behavior	Never stop on payment page	0	0
	Stop at the payment page	5	5
	Stop on shopping cart	2	2
Shopping Behavior	Impulsive	1	1
	Instant Decision	2	2
	automatic payment	0	0
	Not Impulsive	2	2
Satisfaction with the Payment System	Satisfied	2	2
	Dissatisfied	6	19
	Excessive Effort	1	3
	Neutral	2	4

IV. DISCUSSION

　　In User Behavior in Payment, Netherlands users never stop at the payment page and claim to have tendency of impulsivity, while Indonesian user stop because of the feeling excessive effort factor to continue the payment due to long steps of payment that make have a time to think whether they want to continue the payment or not, which align with the value-seeking behavior of Indonesian users because they often consider different benefit across varieties of platform. The average time for customers to make an impulsive purchase is less than 13 seconds, if it requires more than that the urgency to purchase is gone [5].

　　In　User Perceptions in Payment Expectations for future payment systems reflect the current condition of the payment system, Netherlands user has high expectations that not even exist yet because they had a high level of satisfaction. On the other hand, the expectation of Indonesian user of the payment system is low because low level of satisfaction.

　　In User Choices and Preferences in Payment, The Netherlands payment platforms have the same offer which is the fast value to encourage consumer spending because most of the payment system is automatic payment, while Indonesia payment platforms offer different benefit, for example rewards, free delivery, or lowest fees charged. This is the reason why Indonesia user have a high point for seeking value benefit. The informants adding value information regarding e-commerce in Indonesia needs to think about the affordability of payment methods because of the MDR factor, the payment processing service

provider that banks charge merchants. The most affordable is virtual account billing which has complicated steps that make Indonesia have low level of dissatisfaction. Other than MDR, In order to have integrated payment with the bank, the bank needs to verify it and the authenticator is using account number. This is risky because apparently many cases in Indonesia prove that the Indonesian government is untrustworthy and not safe for saving the privacy data. Thus, the function of MDR charged by Bank Indonesia needs to be studied more regarding the efficiency and benefit for the long term for Indonesia.

In User Interaction and Preferences in Payment, Both Indonesia and Netherlands users consider and judge platforms through website aesthetics rather then website security. It aligns with the research that explains there is a relationship between website aesthetics and trustworthiness [8]

V. CONCLUSION

This research aimed to find the key differences and similarities of customer shopping behavior and payment systems in Indonesia and the Netherlands that can be applied in Indonesia as developed countries to increase economic growth. According to Economics theory, there is a significant relationship between consumer spending and economic growth [2]. The result revealed that the main difference between Indonesian and Netherland shopping behavior is on the user behavior in payment affected by different payment system due to bank intervention and government regulation regarding data safety, different level range of MDR in Indonesia, and permit of availability payment option in Indonesia.

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