

# “Dynamic cross-border payment preferences: A qualitative study of Indonesian expatriates in Thailand and Malaysia”

## AUTHORS

Pandu Kurniawan   
Didi Achjari 

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Pandu Kurniawan, S.E., M.Acc., Akt., CPA., ASEAN CPA., CRMO, Faculty of Economics and Business, Department of Accounting, Gadjah Mada University, Indonesia. (Corresponding author)

Didi Achjari, Ph.D., Professor, M.Com., Ak., CA., Faculty of Economics and Business, Department of Accounting, Gadjah Mada University, Indonesia.

Pandu Kurniawan (Indonesia), Didi Achjari (Indonesia)

# DYNAMIC CROSS-BORDER PAYMENT PREFERENCES: A QUALITATIVE STUDY OF INDONESIAN EXPATRIATES IN THAILAND AND MALAYSIA

## Abstract

Along with the development of global digitalization, international financial transactions are also advancing. In response, Indonesia (Bank Indonesia) collaborated with Malaysia and Thailand by launching Local Currency Settlement (LCS) integrated with Quick Response (QR) codes to reduce the use of dollars in cross-border transactions. Therefore, this study aims to investigate the Indonesian customer (Indonesian expatriates) preferences for payment methods provided by Bank Indonesia, specifically in the context of facilitating cross-border transactions. The number of research participants was 50 Indonesian expatriates (36 in Thailand, 14 in Malaysia), who were purposefully selected based on the criteria of being Indonesian traveling, studying, or residing in Thailand and Malaysia while maintaining Indonesian bank accounts. To identify these preferences, this study uses qualitative research using the Analytic Hierarchy Process (AHP) method. Based on the Hierarchical analysis, the results show that the main alternatives in payment method preference in Thailand and Malaysia show that Visa is still the most dominant in cross-border transactions. Across hierarchical criteria, including trust, speed, usability, installment flexibility, timing, and offering interest-free installment plans, Visa consistently outperformed QR Codes and Cash. Nonetheless, it is essential to highlight that QR Codes scored the highest in the criteria of Ease of Use in Malaysia. While in Thailand, QR codes achieved the highest score in terms of cost-effectiveness.

## Keywords

cross-border payment, QR code payment, local currency settlement, AHP, payment method preference

## JEL Classification

E42, E58

## INTRODUCTION

Financial transactions have become an essential trend in the context of continued digitalization, driving the adoption of payment international innovations (Tagiyeva et al., 2023; Vatsa et al., 2023). Moreover, the reliance on the US Dollar as an international currency has also encouraged Southeast Asian countries to collaborate in exploring potential alternatives (Nusair & Olson, 2019). In this case, Indonesia has collaborated with Malaysia and Thailand to use Local Currency Settlement (LCS) for investment, trade, and other financial transactions using each country's currency directly (Mardiana, 2018; Nofansya & Sidik, 2022). One of the technologies used to facilitate Local Currency Settlement (LCS) is cross-border Quick Response (QR). The interconnection and interoperability between Bank Indonesia (BI) and Bank of Thailand used payment linkage. On the other hand, the cooperation between Bank Indonesia and Bank Negara Malaysia is supported by the Indonesian Payment System Association (ASPI), RAJA (Rintis, Artajasa, Jalin, and Alto), Payments Network Malaysia (PayNet), and other financial institutions (Bank Indonesia, 2022). This technology



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facilitates retail payments in both countries by scanning the Quick Response Code Indonesian Standard (QRIS), such as Thailand QR Payment, and DuitNow QR Codes (Nofansya & Sidik, 2022). Therefore, the existence of QRIS, Thai QR Payment, and DuitNow QR Code will impact the use of Visa and cash in cross-border transactions.

Furthermore, the payment method preference is highly influenced by the Consumer behavior. This consumer behavior is concerned with usability, socio-economical infrastructure, and payment type. The usability becomes the main point in this context, which consists of Ease of Use and Personalization. Ease of use significantly influences consumers' cross-border payment choices, with a preference for methods that feature minimal and easy steps (Vatsa et al., 2023; Chaveesuk & Piyawat, 2021). Personalization is also crucial in payment method preference, with a system that allows users to customize their transactions (Amoah et al., 2023). In addition, in socio-economic infrastructure (Osmani et al., 2017), the customer will prefer systems prioritizing transaction security and compliance with international laws and regulations (Amoah et al., 2023; Hamzah et al., 2023). The administrative cost per transaction also influences the preference while considering the security of the transaction (Osmani et al., 2017; Wu et al., 2023). Transaction speed is also an essential factor. It is related to the need for urgent payments within a limited time (Abdennebi, 2023; Osmani et al., 2017). Payment criteria are focused on the ability to make payments in installments, the timing of payments, and the availability of interest-free installment options.

Interestingly, despite the user-friendly nature of QR codes as a payment method, their popularity is still relatively low, particularly in Indonesia. This disparity in adoption triggered the researcher's curiosity, thus prompting an exploration into the reasons behind user preferences. Identifying users' payment method preferences enables stakeholders to recognize critical insights to enhance cross-border payment safety, accessibility, and efficiency, along with impacting the economy's growth and the country's financial prosperity. As a result, this study aims to investigate customer (Indonesian expatriates) preferences for payment methods provided by Bank Indonesia, specifically in the context of facilitating cross-border payments.

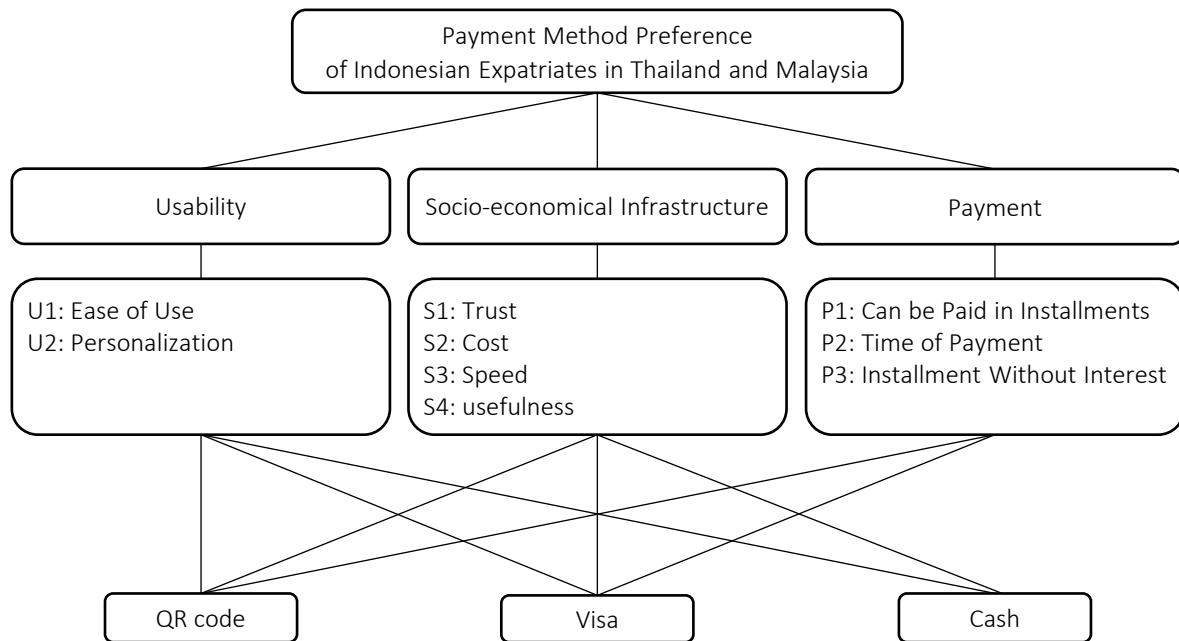
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## 1. LITERATURE REVIEW

There are several players in cross-border payments that consumers have long trusted, such as Visa, Rupay, and Mastercard (Narendra & Aghila, 2021). However, digital payments (without physical contact) have started to be implemented in various countries since the COVID-19 pandemic. Electronic wallets have become the next wave of transactions (Che Nawi et al., 2022). This technology includes using QR codes such as Quick Response Code Indonesian Standard (QRIS), Thailand QR Payment, and DuitNow QR Codes. QRIS is a payment standardization using the QR Code method from Bank Indonesia (BI), with a safer, easier, and faster transaction process (Gunawan et al., 2023; Puspitasari & Salehudin, 2022). The utilization of QRIS has been regulated in Bank Indonesia Board of Governors Regulation No. 21/18/PADG/2019 as a digital payment that facilitates transactions at several merchants

(Purwanto et al., 2024; Saputri, 2020). However, it requires opening an account with an Indonesian-licensed bank provider, and there are limitations on the transaction amount. In recovering the national economy by accelerating efficient and inclusive digitalization, Bank Indonesia issued Board of Governors Regulation No. 24/1/PADG/2022 regarding the change in the nominal amount per transaction to 10,000,000 IDR, effective March 1, 2022. This transaction nominal restriction may also affect cross-border payments, given the different prices of basic goods in other countries compared to Indonesia.

Not only Indonesia, but Malaysia has also released digital technology in payment using a QR code called DuitNow QR. Like QRIS, DuitNow QR users must have a bank account with a participating bank and a mobile banking application that supports this service. Research on using QR codes in Malaysia for payments has been conducted. Based



**Figure 1.** Research framework

on Hamzah et al. (2023), the use of QR code payments for retail consumers can be influenced by social expectations and perceived value. In addition, Hairani et al. (2021) show that ease of use, social influence, and safety can influence retail customers in payments using QR codes. The Thai government released a QR Code financial transaction service called PromptPay in 2019 (Bui & Luong, 2023; Chaveesuk & Piyawat, 2021). Technology use and consumer behavior have a role in influencing people's intention to use PromptPay financial services and facilitate payment services by using QR codes to buy products and services (Kukuk, 2020). According to Chaveesuk and Piyawat (2021), Manufacturing business entrepreneurs in Eastern Thailand tend to use QR codes less in their transactions than retail, wholesale, and service businesses. It is because they are more focused on running their business. Government affairs, laws, and taxes related to technology concern Eastern residents in using QR Code technology.

Extensive technological improvements have been the stimulus for the creation of a variety of choices in cross-border payment methods (Wu et al., 2021). However, implementation still needs to be improved regarding real-time remittances, global currency standards, and country regulations that are still adapting to new technologies. The issue in real-time remittances will occur if some regu-

lators have different provisions (Niu et al., 2022). This case causes the need for more time to check and compile financial transactions. These remittance lags inhibit the general user experience and do not meet the demands of a rapidly advancing global economy with instant financial interactions. As such, it becomes imperative to address this temporal disconnect to align cross-border payment systems with the expectations and needs of modern users (Narendra & Aghila, 2021).

Global currencies are also an issue in cross-border payment technology. Settlement in different currencies comes with risks and high costs, and cross-border payments are more complex than domestic payments, considering currency accuracy and applicable regulations (Auer et al., 2021). In the transition from fiat to digital currencies, digital currencies compete exclusively and have a specialized role as a medium of exchange for transactions (Auer et al., 2021; Brunnermeier et al., 2019; Kuehnlentz et al., 2023). It encourages endogenous local economic development and external factors by selectively closing space to mitigate the impact of change by implementing regional currency system instruments.

Country regulations also affect cross-border payment methods. In this case, central bank policies are very influential. Most cross-border payments

are implemented through correspondence banking agreements, but cross-border payments will not be efficient if they are not accompanied by the role of technology (Auer et al., 2021). However, commercial bank regulations are currently not fully applicable to mobile payment as a payment method technology. In this case, the security of consumer parties is not fully protected by most third-party platforms. From the consumer's perspective, mobile payments lack asset security protection (Wu et al., 2021). Therefore, combining regulatory-approved technology with legal tender will significantly facilitate cross-border payment systems and could be the banking sector's first step in digital transformation.

Based on the existing literature, this research has a framework, as shown in Figure 1.

## 2. METHODS

This qualitative research uses the Analytic Hierarchy Process (AHP) method because AHP simplifies a problem through a clear hierarchy to measure priorities and choices among alternatives (Saaty, 2008). The primary considerations for choosing the AHP method in this study were:

- 1) AHP is not employed for generalizing situations since this methodology exclusively quantifies subjective judgments about ideas, feelings, and emotions, presenting them on a numerical scale.
- 2) AHP research does not address reliability concerns in variable measurement.
- 3) Utilizing thorough hierarchical analysis for decision-making aligns with a qualitative approach.

Qualitative research emphasizes the depth of thinking to answer the problems at hand and is generally about the main phenomena explored in research locations, and research participants (Creswell & Poth, 2016).

In addition, the Analytic Hierarchy Process (AHP) does not necessitate a large number of participants; it can be executed effectively with

a limited number, even just one participant possessing relevant experience (Cheng & Li, 2001). For instance, in a study examining car purchase decision-making through AHP, only thirteen sales managers participated, each boasting over ten years of experience in their respective fields (Byun, 2001). The determination of the sample size in this study adheres to Roscoe's recommendation (Sekaran & Bougie, 2016) suggesting that a sample size greater than 30 and less than 500 is appropriate for most studies. The number of research participants was 50 Indonesian people (36 in Thailand, 14 in Malaysia), who were purposefully selected based on the criteria of being Indonesian traveling, studying, or residing in Thailand and Malaysia while maintaining Indonesian bank accounts. This sample was strategically selected to focus on individuals engaged in cross-border activities. The chosen sample is relevant because it aligns with the study's specific objectives to investigate Indonesian cross-border payment preferences for payment methods provided by the Indonesian Bank. The number of participants in Malaysia is fewer because cross-border payments using QR codes can only be used starting May 8, 2023, one month before the research sampling. Moreover, participants who used QR Code, Visa, and Cash payment methods were not as many as those in Thailand who first implemented cross-border payments using QR Code, which was fully implemented in Thailand as of August 29, 2022. This study was conducted for 14 days, from May 27, 2023 to June 10, 2023. The data of the research participants are presented in Table 1.

The data collection technique used in this study was a questionnaire that used a paired comparison scale on each element to get responses according to user requests. The pairwise comparison rating scale used ranges from a AHP paired comparison scale of 1 to 9 consisting of 1 = equal, 2 = weak, 3 = moderate, 4 = moderate plus, 5 = strong, 6 = strong plus, 7 = very strong, 8 = very, very strong, and 9 = extreme. The participants expressed their cross-border payment preferences by responding to a questionnaire. Then, the data were analyzed using Expert Choice, AHP analysis tool. The AHP model research instrument is carried out by testing the consistency ratio. If the Coefficient of Reliability value  $\leq 0.10$ , the participant's answer is acceptable. Assessments in pairwise comparisons

**Table 1.** Research participant demographic payment method preference in Thailand and Malaysia

Information	Number of Participants	
	Thailand	Malaysia
<b>Gender</b>		
a. Man	21	8
b. Woman	15	6
<b>Age Group</b>		
a. < 18 years old	0	0
b. 18-27 years old	1	0
c. 28-37 years old	28	12
d. 38-47 years old	5	2
e. > 47 years old	2	0
<b>Recent Education</b>		
a. Bachelor (S1)	4	3
b. Master (S2)	31	11
c. Doctor (S3)	1	0
d. Others	0	0
<b>Are you a QR code, Visa, and cash user?</b>		
a. Yes	36	14
b. No	0	0
<b>How Long Do You Use QR Code, Visa, and Cash?</b>		
a. < 3 Months	6	14
b. 3-6 Months	19	0
c. > 6 Months	11	0

must be corrected first or repeated if the consistency test shows inconsistent results (Hartono, 2018). In addition, the aspects of reliability, according to Ritchie and Lewis (2003), are as follows:

- 1) selection of research samples is not biased;
- 2) data collection techniques are consistent so that they allow participants to describe their experiences;
- 3) the analysis process is carried out systematically;
- 4) interpretation of research results is supported by evidence; and
- 5) there is an opportunity for all perspectives to be identified.

### 3. RESULTS & DISCUSSION

Considering modern financial transactions, recognizing and evaluating payment method preferences is crucial to meet the needs of diverse consumers. In light of the unique dynamics in the Thai and

Malaysian markets, this study was conducted to assess and compare interconnected payment methods. It was conducted based on the Hierarchical Criteria, Sub-criteria, and Alternatives involved in distinguishing the preferred payment methods in Thailand and in Malaysia. The criteria include Usability, Socioeconomic Infrastructure, and Payment Considerations. To demonstrate payment method preferences in Thailand and Malaysia, a more detailed and focused analysis of each country is presented separately.

#### 3.1. The hierarchical analysis payment method preference in Thailand

This hierarchical analysis of payment method preferences in Thailand explores key criteria, sub-criteria, and alternative payment options. The criteria include usability, socio-economic infrastructure, and payment considerations. Within each criterion, there are sub-criteria consisting of ease of use, trust, and installment payment options. The hierarchical analysis of payment method alternatives in Thailand is presented in Table 2.

Table 2 shows that the payment is the main criterion with a weight value of 0.356, followed by the



**Table 2.** Hierarchical analysis of payment method alternatives in Thailand

Criteria		Sub-criteria		QR Code	Visa	Cash
Usability	0.303	Ease of Use	0.536	0.027	0.055	0.08
		Personalization	0.464	0.029	0.062	0.05
Total Criteria of Usability				<b>0.056</b>	<b>0.117</b>	<b>0.13</b>
Socio-economical Infrastructure	0.341	Trust	0.348	0.027	0.055	0.037
		Cost	0.189	0.033	0.018	0.014
		Speed	0.208	0.018	0.037	0.017
		Usefulness	0.255	0.025	0.038	0.025
Total Criteria of Socio-economic Infrastructure				<b>0.103</b>	<b>0.148</b>	<b>0.093</b>
Payment	0.356	Can be Paid in Instalments	0.527	0.055	0.103	0.029
		Time of Payment	0.270	0.026	0.044	0.026
		Installments without Interest	0.203	0.014	0.043	0.015
Total Criteria of Payment				<b>0.095</b>	<b>0.19</b>	<b>0.07</b>
Alternative				0.254	0.455	0.293
Overall Inconsistency					0.02	

socio-economic infrastructure and usability criteria with weight values of 0.341 and 0.303, respectively. The primary consideration in the payment criteria is a payment system that facilitates cross-border payment transactions, which is considered a significant step by Bank Indonesia and Bank of Thailand in addressing the challenges of digitalization to facilitate payment methods.

Usability criteria have the lowest weight when compared to Socio-economic Infrastructure and Payment. Within Usability, “Ease of Use” stands out as an important element, indicating that the simplicity and user-friendly nature of a payment method plays an important role in influencing people’s usability preferences. In addition, QR Codes appeared as the preferred alternative, with a considerably higher score in Ease of Use compared to Visa and Cash. While in terms of “Personalization”, QR Codes have a lower weight compared to Visa and Cash. This finding indicates QR Codes’ continued superiority in terms of ease of use but also shows that their personalization features are perceived as less prominent compared to Visa and Cash.

In the socio-economic criteria, the payment methods were considered based on their trust, cost, speed, and usefulness. In terms of “Trust”, users in Thailand perceive Visa to be the most trusted over QR Codes and Cash. Regarding the “Cost”, the results show that users in Thailand consider QR Codes to be relatively cost-effective compared to Visa and Cash. This finding indicates that from the users’ perspective, QR Codes offer

a better balance between cost and utility compared to Visa and Cash. In terms of “Speed”, Visa is considered to have the fastest transaction speed, while QR Code is seen as almost equal to Cash but still slower than Visa. In addition, in the context of “Usefulness”, Visa has a higher score than QR Code and Cash. Meanwhile, cash has the same weight as QR Codes, indicating the same level of usefulness for these two payment methods.

The payment criteria focus on the ability to make payments in installments, the timing of payments, and the availability of interest-free installment options. In the context of “Can be paid in installments”, Visa scores higher than QR code and cash. Visa is considered more accommodating for installment payments, potentially offering a wider range of flexible installment options compared to QR Code and cash. Similarly, in the “Time of Payment” criteria, Visa is considered to have better timing compared to the QR Code and cash. Cash has the same score as QR Codes, indicating that users view cash and QR Codes as having similar temporal considerations. Visa has a higher score than the QR Code, indicating that users perceive Visa as more likely to offer “interest-free installment” plans. Cash has a similar score to the QR Code.

The main alternative on payment method preference in Thailand showed Visa had a dominant influence in cross-border transactions with a weight of 0.455. This was because Visa was first present to provide cross-border payment services in many countries, not only in the Southeast Asia region,

and had been proven effective in improving methods and security in transactions compared to QR Code, which was newly present in cross-border payments. Meanwhile, the cash payment method was still widely used by Indonesian citizens to make cross-border payments by exchanging IDR money to THB because QR Code could not be used in several merchants in Thailand because these merchants did not support QR Code Prompt Pay with QRIS. The difference between the QR Code alternative and Cash was 0.039; this showed that the use of QR Code would slowly shift the use of Cash in Thailand. Overall inconsistency of 0.02 indicated that the respondent's data were acceptable because the tolerance limit for inconsistency was 0.1.

### 3.2. The hierarchical analysis payment method preference in Malaysia

This hierarchical analysis of payment method preferences in Malaysia explores key criteria, sub-criteria, and alternative payment options. The hierarchical analysis of payment method alternatives in Malaysia is presented in Table 3.

Table 3 presents the hierarchical structure of the main criteria, sub-criteria, and alternatives in the preference of payment methods in Malaysia. The results show that usability is the highest, with a weight value of 0.478, followed by the payment infrastructure and socio-economic criteria, with weight values of 0.328 and 0.194, respectively. The main consideration in the usability criteria is the cooperation between Bank Indonesia and Bank

Negara Malaysia in terms of cross-border payments, which has a positive impact on facilitating and improving cross-border payment methods.

In the context of Usability, there are two sub-criteria: "Ease of Use" and "Personalization." In terms of "Ease of Use," QR Codes stand out with a score of 0.103, indicating that users find it the easiest to use. Visa follows closely behind with a similar score, indicating a high level of usability. Meanwhile, cash has a lower score indicating a relatively lower perceived ease of use. In the context of "Personalization," Visa scored the highest at 0.09, which indicates that users in Malaysia consider Visa to have a relatively higher level of personalization compared to QR Code and Cash. However, the scores of the three are not much different, indicating almost comparable levels of personalization.

In the socio-economic infrastructure criteria, the payment methods were considered based on their trust, cost, speed, and usefulness. In terms of "trust", users in Malaysia generally perceive Visa to be the most trusted, but QR Code and Cash are still quite reliable. In terms of "cost", QR Code is considered the most affordable, and Visa is slightly more cost-effective than Cash but still with a lower score compared to QR Code. Then, in terms of "speed", QR Code and Cash are considered equally fast, while Visa is considered slightly slower. In terms of "usefulness", Visa receives a higher score indicating that users attribute a higher degree of practicality. Meanwhile, QR Code and Cash are considered to have a lower level of usefulness in their daily transactions.

**Table 3.** Hierarchical analysis of payment method alternatives in Malaysia

Criteria		Sub-criteria		QR Code	Visa	Cash
Usability	0.478	Ease of Use	0.486	0.103	0.091	0.038
		Personalization	0.514	0.08	0.09	0.075
Total Criteria Usability				<b>0.183</b>	<b>0.181</b>	<b>0.113</b>
Socio-economical Infrastructure	0.194	Trust	0.276	0.016	0.027	0.01
		Cost	0.216	0.01	0.008	0.024
		Speed	0.184	0.007	0.021	0.007
		Usefulness	0.324	0.016	0.034	0.013
Total Criteria Socio-economic Infrastructure				<b>0.049</b>	<b>0.09</b>	<b>0.054</b>
Payment	0.328	Can be Paid in Installments	0.546	0.057	0.097	0.025
		Time of Payment	0.294	0.032	0.042	0.023
		Installments without Interest	0.160	0.011	0.027	0.015
Total Criteria Payment				<b>0.1</b>	<b>0.166</b>	<b>0.063</b>
Alternative				0.332	0.437	0.23
Overall Inconsistency				0.04		



The Payment criteria focused on the ability to make payments in installments, the timing of payments, and the availability of interest-free installment options. When it comes to “installment payments,” users in Malaysia consider Visa to be the most preferred option, as it has the highest score of 0.097. This score shows a strong relationship with installment flexibility. On the other hand, QR Code, with a score of 0.057, is viewed as a fairly viable option for installment payments, indicating that users find it suitable but not as flexible as Visa. However, cash with the lowest score at 0.025, has the least favorable perception in terms of its suitability for installment-based payments, showing that users find it less accommodating to installment flexibility compared to QR Code and Visa. When it comes to “Time of Payment,” users in Malaysia view Visa as the most favorable, with the highest score at 0.042. This score indicates that users associate Visa with better payment timings. QR Code and Cash scored lower indicating relatively less favorable timing. In this case, Visa comes out as having a stronger association with favorable timing, while users view Cash and QR Codes as more similar in terms of temporal considerations. In terms of installment options, Visa gets the highest score of 0.027 for “Interest-Free Installments,” which indicates that users perceive Visa as more likely to offer interest-free installment plans. QR Code follows with a score of 0.011, reflecting a lower association with interest-free installment options. Cash has a score of 0.015, indicating a slightly higher perception than QR Code but still lower than Visa.

The main alternative on payment method preference in Malaysia showed Visa had a dominant influence in cross-border transactions with a weight of 0.437. This was because Visa was first present to provide cross-border payment services in many countries, not only in the Southeast Asia region, and had been proven effective in improving methods and security in transactions compared to QR Code. This was only present in cross-border payments, especially in Malaysia, which was one month before this study was conducted, while the cash payment method has been replaced by the use of QR Code with a weight value of 0.23 and 0.332, respectively. This reflects the use of QR Code in Malaysia has increased significantly over the use of cash in transactions. This was due to personalization and digitalization which had an equally strong influence. Overall inconsistency was 0.04,

which indicated that the respondent’s data were acceptable because the tolerance limit for inconsistency was 0.1.

## 4. DISCUSSION

In the context of cross-border payment preferences among Indonesian citizens in Thailand, the findings show that Visa is the most dominant payment method. At the same time, the difference between QR codes and Cash is perceived as insignificant. The dominant influence of Visa in cross-border transactions indicates its widespread use and preference. This dominance can be linked to Visa’s early establishment of cross-border payment services in various countries, including Thailand, and its proven effectiveness in improving transaction methods and security. On the contrary, although gaining traction, the QR Code faces challenges in all-around adoption due to limited support from some Thai merchants, hence its relatively small weight. It is in line with Widayat et al. (2023) who state this case is influenced by social factors, support facilities (m-banking), and user expectations. While Cash is still widely used, it has almost been equaled by QR codes. This points to a gradual transition from traditional cash payments to Thailand’s emerging QR Code method. Across multiple criteria, Visa consistently scored the highest among the payment methods evaluated for cross-border transactions among Indonesian citizens in Thailand. Across every criterion, including trust, speed, usability, installment flexibility, timing, and offering interest-free installment plans, Visa consistently outperformed QR Codes and Cash. Noticeably, QR Code only achieved the highest score in terms of cost-effectiveness, suggesting that users consider it a relatively economical option compared to Visa and Cash.

In comparing cross-border payment preferences among Indonesian citizens in Malaysia, the findings highlighted Visa as the most dominant, followed closely behind by QR Code and cash as the least option. In particular, Visa scored the highest in terms of trust, cost-effectiveness, speed, usability, installment flexibility, payment timing, and availability of interest-free installment options. QR Codes came in second as the most preferred alternative, reflecting its growing significance, especially in Malaysia, where its adoption has increased significantly. On the contrary, the traditional use of cash has reduced,

being recorded as the least preferred option. This shifting away from cash transactions is pointing to a broader trend towards digitization and personalization influencing payment preferences. However, it is important to highlight that QR Codes scored the highest only in the criteria of “Ease of Use,” which shows its strength in providing an easy-to-use and accessible payment experience.

By seeing the result of this study, the cross-border payment using QR codes has gained increasing popularity, since it provides a convenient and efficient way to make transactions across different countries and regions. Cross-border payment with the concept of Local Currency Settlement (LCS) is accompanied by the rapid development of information and communication technology and the support of the three central banks (Bank Indonesia, Bank of Thailand, and Bank Negara Malaysia). This indicates that it is possible that in the next few years, the ASEAN region will be integrated with the cooperation of the 10 Central Banks of each member country using QR Code payment. Cross-border payment implementation under the Local Currency Settlement (LCS) concept will have an impact on dedollarization in the ASEAN Region. This supports the arguments that cross-border payments facilitate easy bilateral trade between nations, enabling nations with comparable monetary policies to engage in commerce without relying on the dollar (Agarwal, 2023).

The hierarchical analysis of payment method preferences revealed that socio-economic infrastructure criteria were the second and third criteria for cross-border payments in Thailand and Malaysia. In contrast to the findings of Osmani et al. (2017), who discovered that the third criterion in assessing the electronic payment system variables influencing the use of mobile banking in Iranian banks was socio-economic infrastructure, these findings disagree. It is important that a significant sub-criterion influencing cross-border payment preference in Malaysia and Thailand is the socio-economic infrastructure’s credibility. This finding is also in line with Osmani et al. (2017), which discovered that the primary basis for evaluating the e-payment system elements influencing the adoption of mobile banking in Iranian banks is the trust sub-criteria.

Furthermore, payment is the primary need for cross-border payments in Malaysia, whereas it ranks second in Thailand. This is not in line with Adriantantri et al. (2020), the Integrating AHP and DEA Methods for Supplier Selection does not take the payment criterion into account. Furthermore, unlike Thailand, Malaysia bases cross-border payments primarily on usability criteria. According to Tang and Ngerng (2015), when it comes to how students choose social networking sites, usability characteristics come in second.

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## CONCLUSION

This research seeks to explore the preferences of Indonesian customers, particularly Indonesian expatriates, regarding the payment methods offered by Bank Indonesia, with a focus on facilitating cross-border transactions. This study shows a hierarchy of cross-border payment method preferences in Thailand and Malaysia. Payment is the main criterion in payment method preferences in Thailand, while usability is the main criterion in payment method preferences in Malaysia. In addition, the sub-criteria hierarchy of each criterion in payment methods in Thailand and Malaysia has a different hierarchy. This study also shows that Visa is the most dominant payment method among Indonesian citizens in Thailand and Malaysia. Across every criterion, including trust, speed, usability, installment flexibility, timing, and offering

interest-free installment plans, Visa consistently outperformed QR Codes and Cash. However, it is essential to highlight that QR Codes scored the highest in the criteria of Ease of Use in Malaysia, and in Thailand, QR codes only achieved the highest score in terms of cost-effectiveness. The implications of this study revealed the hierarchy of payment method preferences in Thailand and Malaysia. It was very important to know the impact of digitalization in terms of payment methods across countries. The researcher’s suggestion is to conduct similar research, especially in Malaysia, to find out changes in the hierarchy of payment methods. This is because the implementation of QR Code between Bank Indonesia and Bank Negara Malaysia has only been implemented for one month.

## AUTHOR CONTRIBUTIONS

Conceptualization: Pandu Kurniawan, Didi Achjari.

Data curation: Pandu Kurniawan, Didi Achjari.

Formal analysis: Pandu Kurniawan, Didi Achjari.

Methodology: Pandu Kurniawan, Didi Achjari.

Resources: Pandu Kurniawan, Didi Achjari.

Supervision: Didi Achjari.

Validation: Didi Achjari.

Writing – original draft: Pandu Kurniawan, Didi Achjari.

Writing – reviewing & editing: Pandu Kurniawan, Didi Achjari.

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