

**THE INFLUENCE OF EXTRINSIC AND  
INTRINSIC MOTIVATION AND  
TECHNOLOGY ADOPTION ON MOBILE  
PAYMENT USAGE AMONG MILLENNIALS  
IN JAKARTA, INDONESIA**

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**ASIA e UNIVERSITY  
2025**

THE INFLUENCE OF EXTRINSIC AND INTRINSIC MOTIVATION AND  
TECHNOLOGY ADOPTION ON MOBILE PAYMENT USAGE AMONG  
MILLENNIALS IN JAKARTA, INDONESIA

DICKY SUPRIATNA

A Thesis Submitted to Asia e University in  
Fulfilment of the Requirements for the  
Degree of Doctor of Philosophy

June 2025

## ABSTRACT

The rapid growth of mobile payment in Indonesia has been driven by technological advancements, improved financial literacy, and government initiatives such as the *Gerakan Nasional Non-Tunai* (GNNT—Non-Cash National Movement). Nevertheless, usage among millennials in Jakarta, Indonesia—as a national barometer city—remains relatively low due to issues of convenience, security concerns, and the limited effectiveness of extrinsic incentives. This gap warrants further investigation, particularly as millennials represent the most socio-economically dominant generation and should act as leaders in the digital financial transformation. Theoretically, prior studies have tended to emphasise extrinsic motivation and intrinsic motivation while positioning behavioural intention or attitude as mediators towards actual usage. In contrast, this study introduces Technology Adoption (TA)—operationalised through perceived usefulness and perceived ease of use—as the key mediating variable, thereby offering a novel perspective on the internalisation mechanism of motivation before it translates into actual usage. This research integrates the Self-Determination Theory (SDT) and the Technology Acceptance Model (TAM) into a unified conceptual framework. A purposive sampling technique was employed, yielding 305 responses. After excluding non-millennial respondents, those outside Jakarta, and statistical outliers, 162 valid responses were retained, representing a final usable response rate of 53.11%. Data were analysed using Partial Least Squares-Structural Equation Modelling (PLS-SEM) with a reflective–formative Higher Component Model (HCM) approach. The findings indicate that intrinsic motivation—particularly perceived convenience and perceived security—significantly influences TA and, through TA, the use of mobile payment, confirming a full mediation effect with a large effect size (0.366). Conversely, extrinsic motivation (promotion & discount, social influence, and social support) exerts no significant effect on either TA or mobile payment usage. Theoretically, this study extends SDT and TAM by reaffirming the dominant role of intrinsic motivation and advancing TA as an alternative mediating mechanism beyond the conventional reliance on behavioural intention or attitude. Practically, the findings recommend that government initiatives such as GNNT should be strengthened through enhanced digital financial literacy, improved system security, and public awareness campaigns—particularly against social engineering practices—to foster trust. Meanwhile, service providers should prioritise positive user experiences by investing in intuitive interface design, robust security features, and trust-building strategies to encourage sustained adoption of mobile payment among millennials.

**Keywords:** Mobile payment, self-determination theory, technology acceptance model, intrinsic motivation, extrinsic motivation, technology adoption, millennials, Indonesia.

## **APPROVAL**

This is to certify that this thesis conforms to acceptable standards of scholarly presentation and is fully adequate, in quality and scope, for the fulfilment of the requirements for the degree of Doctor of Philosophy.

The student has been supervised by: **Professor Dr Juhary Ali**

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This thesis was submitted to Asia e University and is accepted as fulfilment of the requirements for the degree of Doctor of Philosophy.



**Professor Dr Siow Heng Loke**

Asia e University

Chairperson, Examination Committee

(19 June 2025)

## **DECLARATION**

I hereby declare that the thesis submitted in fulfilment of the requirements for the Degree of Doctor of Philosophy is my own work and that all contributions from any other persons or sources are properly and duly cited. I further declare that the material has not been submitted either in whole or in part, for a degree at this or any other university. In making this declaration, I understand and acknowledge any breaches in this declaration constitute academic misconduct, which may result in my expulsion from the programme and/or exclusion from the award of the degree.

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**Signature of Student:**

**Date: 19 June 2025**



## ACKNOWLEDGEMENTS

Alhamdulillah, all praises and gratitude are due to ALLAH SWT for His mercy, blessings, and strength, enabling me to complete this dissertation. Without His guidance and help, this journey would not have been possible. Peace and blessings be upon the RasuluLlah MUHAMMAD S.A.W., who is the guiding light in my life and existence.

I extend my heartfelt gratitude to my supervisor, Professor Dr. Juhary Ali, S.D.K., for his support, insightful feedback, and exceptional guidance throughout this process. His direction has been invaluable in completing this research.

I also express my appreciation to the examiners for their constructive input and to everyone at Asia e University for the assistance and resources provided during my studies.

This study is dedicated to my late parents. May the knowledge and wisdom I have gained become a source of everlasting reward for them. My deepest gratitude goes to my beloved wife and daughters, Rias Ervinawati, Syafira Chloe Alexandra, and Shareen Cleo Allerina, for their endless love, sacrifices, and unwavering support.

I would like to thank Trisakti School of Management, my friends, and colleagues, including Arya Pradipta, Irwanto Handojo, Yulius Kurnia Susanto, Stella, Friska, Nicken D, Poppy, Arwina, and many others whose names are too numerous to mention. My gratitude also extends to my extended family for their prayers and support.

Finally, I am grateful to the respondents of this research for their valuable participation, which was crucial to the success of this study. May this dissertation provide meaningful contributions to the field of business administration and serve as an inspiration to many.

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## LIST OF ABBREVIATIONS

FINTECH	Financial Technology
M-PAYMENT	Mobile Payments
E-WALLET	Electronic Wallet
GNNT	Gerakan Nasional Non-Tunai (Non-Cash National Movement)
QRIS	Quick Response Code Indonesian Standard
PLS	Partial Least Squares
SEM	Structural Equation Modeling
HCM	Hierarchical Component Model
LOC	Lower-Order Component
HOC	Higher-Order Component
SOR	Stimulus-Organism-Response
TAM	Technology Acceptance Model
SDT	Self Determination Theory
PD	Promotion & Discount
SI	Social Influence
SS	Social Support
PC	Perceived Convenience
PS	Perceived Security
PU	Perceived Usefulness
PEU	Perceived Ease of Use

EM	Extrinsic Motivation
IM	Intrinsic Motivation
TA	Technology Adoption
UMP	Use of Mobile Payment

# CHAPTER 1

## INTRODUCTION

### 1.0 Background of the Study

The trajectory of a nation's economy in this technological era is profoundly shaped by its capacity to embrace and integrate digital innovation, particularly in the context of the emerging digital economy. Globally, the digital economy has emerged as a “new engine” of economic growth, enhancing competitiveness, fostering innovation, and transforming how people and institutions interact economically (Zhao et al., 2024). Among the most influential drivers of this transformation is the rise of financial technology (fintech), which encompasses a broad range of technological advancements aimed at revolutionising the delivery and accessibility of financial services. In this context, mobile payment systems have gained prominence for their potential to enhance financial inclusion, increase transactional efficiency, market expansion, security, convenience, digital empowerment, and reduce reliance on traditional banking infrastructures.

The motivation behind this study arises from the paradox observed in the usage of mobile payments, particularly among millennials in Jakarta, Indonesia. Despite the growing digital infrastructure, government initiatives, and the high consumption levels of this demographic, the rate of mobile payment usage remains notably low. This study seeks to investigate the behavioural and motivational factors that explain this discrepancy. By focusing on intrinsic and extrinsic motivations as well as technology adoption, this research aims to provide a deeper understanding of the psychological mechanisms that influence millennials' engagement with the use of mobile payment. The findings are expected to contribute both to the theoretical understanding of

technology adoption in developing economies and to the practical formulation of mobile payment strategies tailored for millennials in Jakarta, Indonesia.

The growth of mobile payments represents the fastest-expanding payment method, effectively surpassing traditional systems such as cash, cheques, and even debit/credit cards. Projections indicate that between 2021 and 2025, mobile payment usage will see a notable increase of 3.9%. In contrast, credit card usage is expected to decline by -2.2%, debit cards by -0.3%, bank transfer methods by -1.2%, and even cash payments are estimated to decrease by -2% (see Table 1.1 below).

**Table 1.1: Global Payments Trend Prediction**

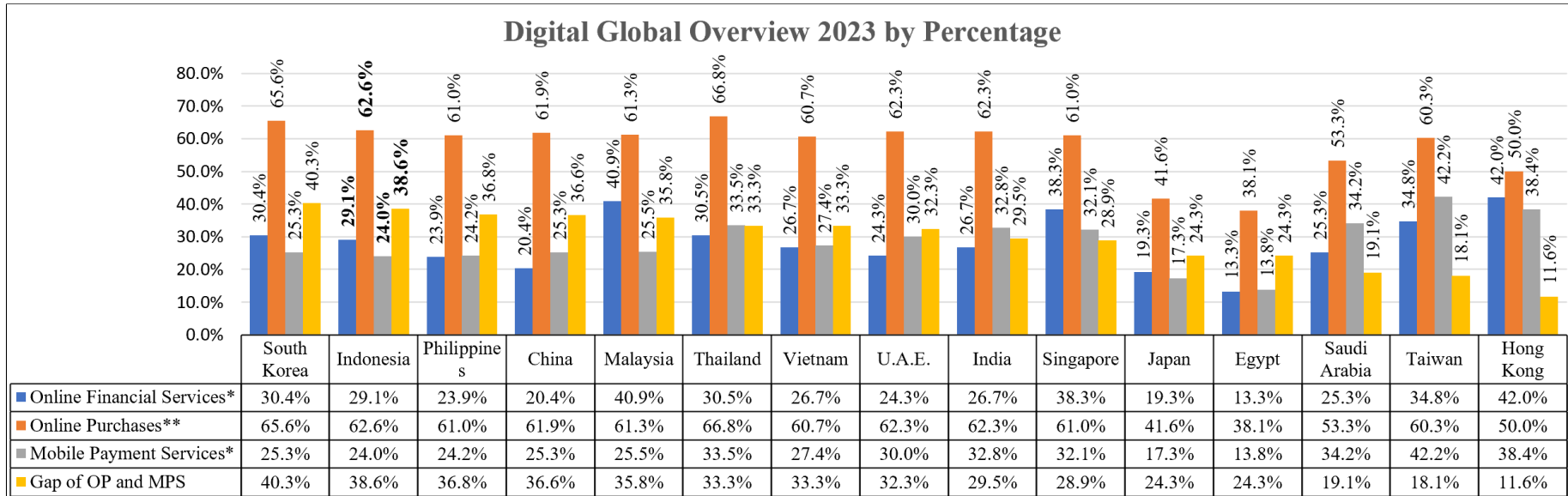
Payments Method	Year		Change	Indication
	2021	2025		
Digital/Mobile Wallet	48.6%	52.5%	3.9%	↑
Credit Card/Charge Card	21%	18.8%	-2.2%	↓
Debit Card	13.2%	12.9%	-0.3%	↓
Bank Transfer	7.4%	6.2%	-1.2%	↓
Cash on Delivery	3%	1%	-2%	↓

*Note:* From Worldpay (2022).

In 2022, Asia boasted the highest mobile wallet penetration. Notably, nine out of the top 10 countries leading in mobile wallet adoption were located in the Asia-Pacific region (de Best, 2024a). Across the Asian continent, the rapid spread of mobile payment technologies has triggered profound shifts in consumer behaviour and economic transactions.

Figure 1.1 below shows the countries that dominate mobile payment usage in Asia, including Taiwan, Hong Kong, Saudi Arabia, Thailand, India, Singapore, UAE, Vietnam, Malaysia, China, South Korea, the Philippines, Indonesia, Japan, and Egypt.

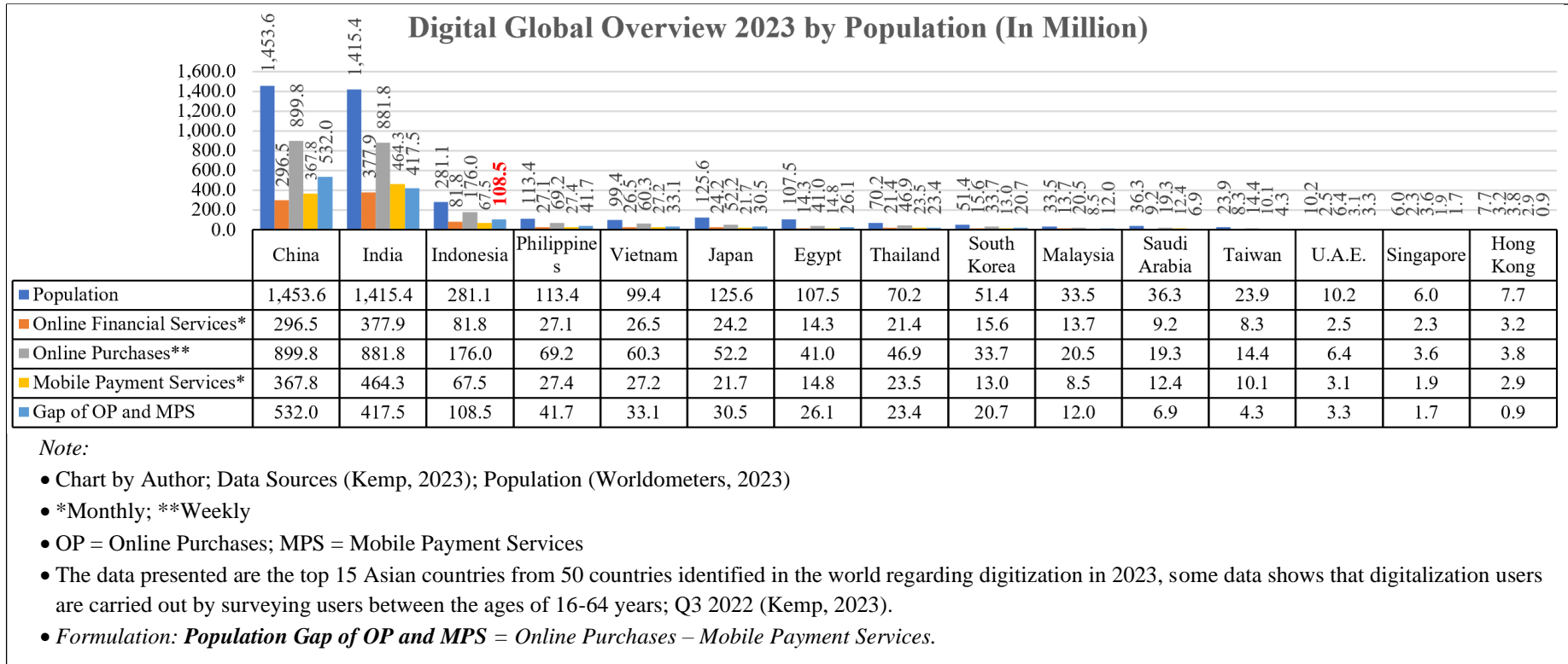
**Figure 1.1: Global Overview Report for Digital 2023 by Percentage**



*Note:*

- Chart by Author; Data Sources (Kemp, 2023); Population (Worldometers, 2023)
- \*Monthly; \*\*Weekly
- OP = Online Purchases; MPS = Mobile Payment Services
- The data presented are the top 15 Asian countries from 50 countries identified in the world regarding digitization in 2023, some data shows that digitalization users are carried out by surveying users between the ages of 16-64 years; Q3 2022 (Kemp, 2023).

**Figure 1.2: Global Overview Report for Digital 2023 by Population**



Several Asian countries, such as Singapore, Malaysia, and China (including Taiwan and Hong Kong), have emerged as nations that have successfully integrated mobile payment systems into their socio-economic structures. These countries exemplify the transformative power of fintech in advancing inclusive growth, spurring digital innovation, enhancing security, improving convenience and cost efficiency, fostering e-commerce growth, and expanding financial accessibility to diverse demographic segments.

The following are examples of Asian countries that have successfully implemented mobile payment systems and the various positive impacts on their economies:

- i. **China:** Leading efforts to transition society towards cashless transactions, over 81% of smartphone users conduct cashless transactions. Alipay, Tenpay, and WeChatPay are the top third-party providers in China (de Best, 2024b; Slotta, 2023). The growth of the fintech industry in China has supported e-commerce, with more than 20% of users from rural areas gaining access to financial services previously unavailable (Slotta, 2023). Mobile payments and e-commerce platforms allow rural residents to sell local products and buy hard-to-find goods. Alipay has been accepted in over 56 global markets since 2019, facilitating the use of foreign credit cards in China by overseas users and tourists.
- ii. **Singapore:** As a leader in cashless usage in Southeast Asia, Singapore is supported by advanced digital infrastructure and a progressive national digitalisation strategy. With digital transaction values reaching USD 20.51 billion, the people of Singapore use mobile payments and electronic transfers as their primary choices. National programmes like PayNow enable instant fund transfers between financial institutions, while digital wallets like GrabPay facilitate these payments. Cross-

country payment system integration, such as with Thailand, supports Singapore's vision of becoming a digitally connected and innovative society. Consumers are increasingly adopting contactless payments via mobile devices, reflecting a shift towards more efficient and secure digital transactions (Statista Research Department, 2024b).

iii. **Malaysia:** The COVID-19 pandemic accelerated the adoption of cashless payment methods in Malaysia, making it the second highest in Southeast Asia, with a value reaching USD 23.43 billion. The growth of the e-commerce market and government initiatives such as MyDigital, launched in 2021, have driven the popularity of digital payment systems such as credit cards, online banking, and e-wallets. With strong mobile networks and expanded 5G coverage, Malaysians easily access digital payment services. E-wallets like Touch n' Go, GrabPay, and Boost have increased in usage, driven by hygiene concerns during the pandemic. Services like Buy Now Pay Later (BNPL) have also gained popularity. Consumer and government support signals that Malaysia's digital payment sector is poised for continued growth (Siddharta, 2024).

In contrast, although Indonesia has witnessed significant growth in its digital economy, characterised by widespread internet access and a rapid transition from cash to digital platforms, mobile payment usage remains notably low. As illustrated in Figure 1.1, the proportion of Indonesians using mobile payments is only 24.2%, placing the country among the lowest in Asia—surpassing only Egypt (13.8%) and Japan (17.3%). Meanwhile, neighbouring countries such as Taiwan (42.2%) and Hong Kong (38.4%) have recorded some of the highest mobile payment usage rates globally, underscoring the challenges that continue to hinder Indonesia's progress in this area.

Interestingly, Indonesia, with a population of 281 million, represents a massive digital market. However, despite 62.6% or 176 million people making online purchases, only 24.2% or 67.5 million people use mobile payment services. This means that 108.5 million people do not use mobile payment when shopping online, placing Indonesia among the top three countries globally with the highest mobile payment resistance after China and India (Figure 1.2). Despite having access to the same tools, such as internet connections, smartphones, and money itself, the rate of mobile payment usage in Indonesia remains low compared to online shopping transactions, where other payment methods like Cash on Delivery, Bank Transfers, and E-Money Cards are preferred for physical transactions.

Romero (2022) outlines various initiatives that have been implemented to enhance the use of mobile payment in Indonesia. These efforts began with the government's Non-Cash National Movement (GNNT), aimed at reducing cash usage and promoting digital payments (Bank Indonesia, 2014). Subsequently, the Indonesian Payment System Blueprint (SPI) was introduced to guide financial institutions in developing an inclusive digital payment infrastructure (Bank Indonesia, 2019). The Quick Response Code Indonesian Standard (QRIS) programme was also implemented, allowing payments through a single QR code compatible with various payment applications. QRIS ASEAN, initiated through collaboration between Indonesia and Thailand, aims to integrate payment systems across ASEAN countries to facilitate cross-border payments (Kementerian PAN dan RB, 2022). Additionally, the presence of more than 48 licensed e-wallet systems in Indonesia provides users with more options for digital transactions (Siahaan, 2022).

Given this context, a comprehensive behavioural investigation is essential to uncover the barriers underlying mobile payment underutilisation in Indonesia. Before