

Exploring commercial contingency environment-developmental factors affecting the adoption of mobile payment: a qualitative study

Sharmila Manoharan^a✉ | Rozanah Ab. Rahman^a  | Elistina Abu Bakar^a  | Haslinda Hashim^a  | Shamala Subramaniam^a 

^aSchool of Business and Economics, University Putra Malaysia, Selangor, Malaysia.

Abstract This qualitative study explores the changes in the commercial environment as external changes impact mobile customer payment (mPayment) adoption from the service provider based on Contingency Theory (CT) underpinnings. To test the objectives, data was collected from semistructured personal interviews using a small group of imminent participants and was analyzed using phenomenological research to yield rich data beyond customer adoption. This study employed the CT and Technology Acceptance Model (TAM) theory to provide in-depth commerce environment contribution factors. These external factors that impact mobile payment adoption from the service provider act as the key driving force in the value chain. Often arising from market dictatorship beyond the service provider's control. This study accumulated data to elucidate Research Question One (RQ1): What are the market developments in the commerce environment influencing mPayment?. The findings indicated that the commerce environment market development branches into three categories: Commercial Environment Development, Commercial Policy Development, and Commercial Trends Development. The characteristic of the mobile payment service market implicates value to customer adoption beyond the ability of the service providers to dictate. The three categories under the mPayment commerce environment market development contributed to the body of knowledge: 1) Commercial Environment Development: affirms the positive mPayment dynamics and progressively visible developmental changes; 2) Commercial Policy Development: allows both service provider and consumer to make an informed decision related to mPayment transactions as it influences the operational frameworks of the consumer; 3) Commercial Trends Development: provides strategic directions to the service providers in the future.

Keywords: mobile payment, external factors, service provider, commercial environment, telecommunication operators, national payments network regulator

1. Introduction

This study explores market development in a commercial environment, where the external environment impacting mPayment customer adoption through contingency theory (CT) is assessed. The external factors are real, and the impact enables us to see the underlying factors beyond customer adoption of market dictatorship. In other words, the market development of the commerce environment is an external factor that survives the circumference of the commercial environment to be adopted by the consumer.

The CT and Technology Adoption Model (TAM) employed in this study was able to determine the critical factors of market development in the commerce environment based on the external forces that impact mobile payment services from a service provider perspective beyond market dictatorship (Dahlberg et al., 2008b; Guo and Bouwman, 2016). This finding was used to answer RQ1: What market developments in the commercial environment influence mPayment?

According to the literature, most technology adoption studies predominantly capture the consumer perspective (Dahlberg et al., 2008; Liebana-Cabanillas et al., 2018; Wang, 2020; Tripathi et al., 2022) rather than the service provider perspective (Zmijewska & Lawrence, 2005; Dennehy & Sammon, 2015) to communicate the bigger picture that surfaces the adoption of mobile payments in Malaysia, informing mPayment. Moreover, when the commercial environment market develops, external forces are characteristic of the mPayment service market (Pfeffer and Salancik, 2003).

This study is organized as follows. Section II introduces the methodology of this qualitative study. Section III provides a detailed presentation of the findings, Section IV concludes this study, and Section V provides recommendations.

2. Methodology

2.1. Data collection method

This study involved practitioners and legislative authorities from the telecommunications and banking industry. The study included the top three Malaysian Telecommunication operators, the Telecommunication Regulator, mPayment providers, and the National Payments Network (PAYNET) Regulator. The selected personnel expressed their opinions through a qualitative face-to-face interview-based survey as the primary data collection method. The qualitative survey consisted of semistructured questions focused on identifying the driving forces in mPayment take-up by addressing the mPayment market developments that influence mPayment customer adoption through changes in the commercial environment. The semistructured interview questions were separated into two parts. Part A gathered background information on the firms and respondents. In contrast, part B focused on inquiries related to the driving forces in mPayment take-up by addressing mPayment market developments and market challenges from changes in the commercial environment.

Additionally, this study also assessed the measures that addressed key consumer adoption issues: perceived ease of use, perceived usefulness, trust, and risk. This study specifically addresses commercial environment market development driving forces in the phenomenon of mPayment take-up, addressing mPayment market developments that influence mPayment customer adoption in the commercial environment, as RQ1 in Part B. This study employed thematic analysis as an approach to qualitative data analysis. The approach involved 12 phases in identifying the themes and concepts of the study.

2.2. Data collection

This study aims to explore RQ1 of market development based on external commerce environment factors influencing customer mPayment adoption through phenomenology research design. Hence, an empirical phenomenology qualitative approach was considered appropriate. The empirical phenomenology approach refers to the actual words conversed by participants to communicate their experience (Austin, 2001) and an attempt to return to the immediate meaning and structure of behavior as it presents itself (Van Kaam, 1958, 1966). A qualitative empirical research design was utilized to produce experiential insight into commercial contingency factors beyond mPayment customer adoption from market development. As part of the analysis, the collected data were manually coded using ATLAS TI to identify, verify and understand the key concepts from the data. The study relied on the theoretical position and transcript data by presenting codes to sentences, phrases, paragraphs or lines. The codes were compared across the whole dataset to identify variations, similarities, patterns, and relationships. Moreover, the reflection of ideas is related to the sections of data abstracted from the dataset and deepened analysis, including the testing and expanding ideas within the collected data.

Codes were further grouped to create fewer themes and refine the critical issues identified by the researcher, followed by identifying the relationships between the themes. The analysis involved continual movement across these stages.

2.3. Research instrument

The study deployed semistructured interviews to cater to open-ended questions from the research participants to communicate their experience representing the actual state of the research on market development in the commerce environment by employing phenomenological research design, influencing customer mPayment adoption.

2.4. Interviews

The interviews were tape-recorded and transcribed. Each interview transcript was saved separately to allow for a common pattern of themes to emerge from the interviews. The selected key respondents held senior regulatory and administrative positions in the top 3 Malaysian Telecommunication operators, Telecommunication regulators, mPayment providers as part of banking operators and the PAYNET.

3. Results and Discussion

This study explored RQ1 on market development in the commerce environment, as the external factors influencing customer mPayment adoption through phenomenology research design branched into three categories of findings: 1) Commercial Environment Development, 2) Commercial Policy Development, and 3) Commercial Trends Development.

3.1. Commercial Environment Development

The constructs uncovered under Commercial Environment Development include 1) Enforcement, 2) E-commerce evolution, 3) Convenience, 4) Mobile phones becoming a consumer product, and 5) being disadvantaged if not part of the race.

3.2. Enforcement

The participants saw enforcing commercial environment development as part of mPayment market dynamics based on government initiatives as a push factor. As regulators, the Ministry of Communications and Digital (KKD) and the Malaysian Communications and Multimedia Commission (MCMC) entrusted mobile service providers to provide services on behalf of the

government as part of environmental development, promoting social inclusivity. Government initiatives enabled service providers to initiate low and nonproductive transactions such as telco-introduced payment machines where consumers must pay their monthly recurring payments via machines instead of heading to the service counter. Another example would be initiating short transactions or value added services (VASs), which are nonproductive transactions that create digital transactions, i.e., Multimedia Messaging Services (MMS) or safe device protection services. The participants shared government directives as push factors, i.e., Prime Keeper application as part of a federal administrative capital effort to promote mPayment in Putrajaya and Cyberjaya. Enforcement implies a gradual move from the usual manual payment to mPayment for low, small, and nonproductive transactions.

“Enforcement, Yes! We put a sticker at the counter that all payments at the machine. So indirectly, you like it or don’t like it, you go there.” (P1)

“By forcibility.... We want to push all customers and all transactions to digital. Short transactions are transactions that are not productive, i.e., payment collection. I don’t get productivity from that. When customers come and ask for value added services, small transactions are not productive. At the same time, we want to make sure the customer is with us... actually, this digital payment channel is very easy... the customer stays with us with a good experience” (P1)

“... it is a directive from the government that everybody has to go for e-payment and for the consumer side you get a lot of incentive...the moment you enter shops, restaurants, you have to scan QR codes and you get discounts” (P2)

“The moment you enter the shops, restaurants, whatsoever, you just have to scan QR codes, and you get discounts. Therefore, that encourages people to use it. So then they make it like no credit cards, no cash...” (P2)

3.3. E-commerce evolution

The study participants also discussed the evolving landscape of e-commerce with diverse yet innovative perspectives as part of commercial environment development. The evolving landscape also includes the shift from semi to full automation, such as the use of automated Teller machines (ATMs) to interbank Giro (IBG) transactions for instant transfer, now known as DuitNow. These applications and devices promote convenience. In addition, there are other examples of widening market transitions where the local market is no longer a national market but has become a global market such as Amazon.com, Rakuten or ebay.com. Part of the e-commerce evolution also ignited competition between challenger banks and challenger entities, i.e., Alipay and WeChat, which started to spin off local players, including our local banks and local applications.

“..evolution of the e-commerce and the advancement in terms of availability of applications, the availability of devices” (P6)

“...markets have expanded, eliminating the boundaries to selling services or products. Additionally, the world has become the new marketplace as the boundary. This evolution creates indefinite new reach and the new horizon that amazon.com, Rakuten represent, and eBay, the multinational technology companies focusing on e-commerce, cloud computing, digital streaming, and artificial intelligence” (P8).

Another participant mentioned the evolution of e-commerce from manufacturing to becoming service-based. For example, service-based e-hailing and no overhead costs for food where the entire value chain is being paid.

“...you want e-hailing, it is a service, you want food, it is a service. Therefore, all these services now are moving to e-payment because e-payment has very little overhead...” (P2)

“...if you order food online, e.g., secret recipe, it would be RM30 including delivery. There is no overhead cost attached. The value chain, however, gets paid all the way.” (P2)

The other participants also reaffirmed that the evolution of e-commerce went beyond changes where its diversification stemmed from the creation and strengthening of a new marketplace created through the existing base, customer strength. For example, the current toll-paying customer base acts as the base for strengthening the new market, such as Touch ‘n Go or RFID, and taxi service providers act as the existing base for Grab.

“...Touch ‘n Go have a lot of customer base in Malaysia, not because they are good with their app but their reliance on the toll payers, which is their strength. They are not necessarily the best service providers for the application. Grab is originally a taxi services provider, not necessarily the best, providing services involving the needs of the current generation of marketplaces and merchants under the app.” (P9)

3.4. Convenience

The participants’ observational experience strongly articulated that the convenience of commercial environmental development empowers a user to manage financial services through mPayment. Moreover, the existing innovation was disrupted to create better and more innovative product applications for convenience. Therefore, convenience is the key to

market disruption while enabling consumer experience. Hence, the creation of new applications and utilization of applications for convenience enhances transition.

“Availability of network coverage, availability of devices, and availability of applications stem from the word convenience that consumers want to experience” (P6)

As convenience redefined product innovativeness (e.g., surge of new applications and devices), participants added that innovation has become more seamless through collaboration. An alleged collaboration between the banking and telecommunications sectors contributed to the adoption of mPayment due to convenience.

“...the need to merge these two industries to give a seamless experience to the customer...” (P4)

The participants advocated that convenience and innovation are strongly related to m-payment environmental development because convenience is highly related to innovation and leads to the consumer experience.

3.5. The mobile phone is becoming a consumer product

A key participant mentioned that the mobile phone is an end-to-end product of people’s lives because it influences their daily activities. One significant part of daily activity is financial transactions, where a consumer can opt to transact over a mobile phone instead of heading to the ATM to withdraw.

“A mobile phone is not just a mobile phone; it has become a consumer product. It is an end-to-end product. We can use it for banking transactions today. I do not have to go to an ATM to withdraw; I can just transfer.” (P3)

3.6. Market space race

Participating in current technological development, such as mPayment, creates a new opportunity for revenue stream market share. Incorporating mPayment into the market space framework enables the creation of a new revenue stream and market share.

“...because business practices who cannot incorporate mobile payment in their framework, would lose out.” (P7)

3.7. Commercial Policy Development

The following constructs were identified under Commercial Policy Development: 1) Regulation as Safeguards, 2) Know Your Customer (eKYC) Framework, and 3) Regulatory Sandboxing.

3.8. Regulation as safeguards

Commercial policy developmental measures invoked relevant imminent changes from both the telecommunications and banking industry policy front, where the document dictates the validity of transactions and empowers the interest of mPayment users.

As Malaysia is moving toward digitalization, the Guidelines on Registration of End-Users of Prepaid within Telecommunication were brought to the participants' attention. Public Cellular Services (MCMC/G/01/17), dated 1 June 2017, requires dictation of control of processes and validation to enable enforcement through the guidelines to safeguard the interest of the prepaid consumer and the interest of service providers. Mobile and SIM cards for prepaid mobile users play crucial roles in mobile payment transactions. Thus, the guidelines could influence the processes involved in the Service Provider System.

“Regulation as safeguards in the Telecommunication industry is as: Because, like if you look at guidelines by MCMC, they don’t even have a section for online prepaid transactions.” (P4)

“...Prepaid guideline is not solely associated with safeguarding purchases online through a prepaid account that requires appropriate clause insertion in the prepaid guideline, but it also denotes the need to include the allowance of online registration with verification of ID for new prepaid customers upon fulfilling the regulatory requirements rather than registering at the dealers” (P8)

From the banking front, emphasis was placed on the Payment Service Act (2003), Financial Services Act (2013), Islamic Financial Services Act (2013), and Electronic Money (E-Money) 30 December (2022). The former guideline on Electronic Money (E-Money) 31 July (2008) (Current: Electronic Money (E-Money) 30 December (2022) reflecting Section 15 on paid-up capital will be enforced 30 December (2023)) encloses an essential revision on the minimum paid-up capital requirements of RM1 million for small-scheme E-money providers and RM5 million for large-scheme E-money providers. The increased paid-up capital requirement reflects the business's health and capability to invest in the company's positive performance. The company would procure a cheap solution for high-security breaches if the paid-up capital amounts to a million.

“Based on the current E-money issuer guideline by Bank Negara, with a very high take-up and influenced many E-wallet players in the country running for the licensing, I think it is the paid-up capital requirements. For the small-scheme E-money provider, the minimum capital requirement is RM1mil. As for the large-scheme E-money provider, it is called the E-money issuer license with the capital requirement of RM5 mil.” (P9)

Another eminent participant’s experiential view of commercial policy development was the strong push of consumer-centricity regulations to be reflected in the system built up as mPayment was mainstreamed in consumer-centric industries, i.e., e-hailing and food.

“Therefore, for all these service systems, the more they build up, as they are holding consumer cash, a lot of cash, then they will have to be regulated with safeguards. Safeguard means regulation.” (P2)

In addition to the need for consumer-centric regulations, participants also added that the current mPayment policy is market-led. Malaysia is highly reactive in passing a policy or set of rules, as the country relies on market dynamics to determine the acceptance of such new technologies. Policy development appears to implement a market-driven approach.

“...in Malaysia, at least for now, I am seeing is a lot more market-led policies. Therefore, these policies are more reactive. Reactive in a sense where users have started using the technologies that have been introduced.” (P10)

3.9. eKYC Framework

The need for the telecommunication and banking sector to work together rose because the eKYC framework involves the participation of trusted platforms as part of a national initiative for remote but secure onboarding. This framework acts as a verification platform for service providers, such as telecommunications service provider licensees, e-wallets or M-commerce. The framework allows the authenticity of the customer by employing the framework. However, the eKYC begins with the customers’ first registration and production of digital ID. The customers’ possession of the digital ID would be a centralized information validation to procure services from the range of service providers. In addition to the procuring services, customer information can be checked for authenticity, which promotes trust prior to customer onboarding with the service provider. While Telecommunication sidelined eKYC- Digital ID, the banking sector employed eKYC. The banking sector maintained its speed of competition in the market to ensure that it did not drop off from the position it had been maintaining for many decades. Therefore, market tipping on the banking industry alone is insufficient because there is a strong need for a solid developmental need for the colluding effort of the telecommunications and banking industry.

Most of the participants stated that there is a need for both the telecommunication and banking industries to complement each other as an interindustry effort rather than competing in performance where a large amount of money is involved in their transactions. Complementing each other by creating one national ID initiated by telecommunications or eKYC by the banking sector would bring together digital and societal inclusions.

“...banking has already started off with their eKYC. They want to assure the public that their database is saved. If your database is with the banking industry, we can assure you that it is very secured...” (P4)

“To the bank, I have 1 ID, then when I go to telecommunication, I have another ID, then for medicine another ID. Therefore, by right, they embarked on the digital ID, it should be coming from one source. Therefore, I would say that the regulator is still working in silo.” (P4)

“Therefore, based on the backing of National Digital ID, it should be a safely secured transaction. Hopefully, it will create more confidence among the users.” (P6)

“When you want to use the Boost app, you will need to answer some questions and be subjected to verification questions. All these verifications under the Boost app are known as eKYC.” (P9)

3.10. Regulatory Sandboxing

Regulatory sandboxing is undoubtedly a core commercial policy development. Therefore, two regulator-led participants strongly voiced the experiment conducted by the respective regulator, i.e., telecommunications or banking. For instance, the Central Bank of Malaysia consistently issued electronic payment licenses even though the public was not receptive to electronic payments. Sandboxing was meant to promote payment take-up as the policy pushed for a loose environment trial by providing electronic payment licenses.

“... payment provider license by Bank Negara. Bank Negara sandboxed allowing trials in a very loose environment or where the services are offered. Therefore, this policy enables mobile payment.” (P6)

“Licenses were issued, but the take-up was slow from the public, but Bank Negara still issued electronic payment licenses.” (P7)

3.11. Commercial Trends Development

Based on qualitative inquiry, the commercial trends of the development constructs were identified based on the research participants' personal and professional experiences. These include 1) Democratized Services, 2) Self-Organized Market, 3) Market Disruptors being Disruptors, and 4) Consolidation.

3.11.1. Democratized Services

According to specific research participants, democratized services are being implemented in Malaysia as a business becomes self-sufficient. When a self-sustaining primary business has expanded to become self-sufficient, the rent seekers or intermediaries are removed.

"You can see in the last ten years essentially, and the internet has removed all the middleman in industries. Previously, it was difficult to quantify those middlemen. Let me give you an example: you have a supplier, food delivery, food panda, and the buyer or customers. Previously, all these middlemen were unquantifiable. You cannot quantify. Now it is democratized, all because the money is going to the right channel." (P2)

Therefore, democratization allows money to flow to the proper funnel between the supplier and the buyer. It also promotes competition in the industry instead of relying on the universal player. For example, one must lease a taxi permit from a company holding a taxi license to drive a taxi. Therefore, the taxi driver would need to hire a cab with a license on daily rates. Currently, Grab is the only rent seeker with a fixed margin. The money is paid electronically by the driver to Grab.

Both P2 and P10 foresee the democratization of services in promoting mPayment take-up. However, P10 stated that democratization could occur in urban areas but not in suburbs and rural areas due to major lifestyle differences. In addition, P10 also exhibited inaccessibility to services and products due to poor or no connectivity.

"Therefore, for example, of the 32 million people in Malaysia, approximately 22 to 23 million people are adults. Moreover, out of these people, for example, in the banking industry, even the largest bank today has only approximately 12 million active users. So where is the other half? The other half has no access to these services or products in the market." (P10)

3.11.2. Self-Organized Market

There seems to be a strong proliferation of self-organized markets in mPayment. To date, several self-organized marketplaces have been formed. For example, Grab, food panda, Lazada, and Shopee. The cash circulating within the self-organized market would eventually be used to venture into other business streams within the same umbrella. A similar analogy is present in banks where consumer money is accumulated and invested in other businesses. Similarly, the proliferation of mPayment markets would eventually form a group of self-organized markets that develop into digital banks.

"...so basically, groups have already been formed. Grab, food panda, Lazada, so these are all self-organized markets." (P2)

"...these self-organized markets would have cash circulating in their services because there is a lot of business online." (P2)

"Now, if Grab keeps RM 200 of your money and then provides you services and while you are using those services, I can create another business." (P2)

P2 and P10 articulated the formation of groups of self-organized markets as becoming digital banks. P10 stated that a self-organized market builds momentum by starting as a single service through super applications by fulfilling use cases to gain customer revisits and expands over time through customer acquisition.

"Observed as a self-organized market, a more common term in the mobile payment space is a super app. An application that does not fulfill one or two use cases right, essentially with the application you would be able to go to your entire day payment purchases." (P10)

"Grab is the biggest player; they are one of the biggest unicorns in SEA. At the same time, they are single-use cases, very specific start-ups. In addition, these start-ups, whether they are in fintech or tech fins out of these areas, they started with one single service, Grab started with ride-hailing service and expanded over time." (P10)

3.11.3. Market Disruptors as Disruptors

Displays how a new business model disrupts the new yet evolving business models. In brief, the existing business status quo becomes obsolete, regardless of the number of years the business has sustained in the market. For example, the taxi was disrupted by Uber, which Grab then disrupted. For example, free-to-air TV was disrupted by Astro, and Astro was disrupted by Netflix.

“...explained that Uber was a disruptor to TAXIs. In addition, Gojek disrupted Uber with its new business model and service offerings, including motorcycle-carrying passengers, which come in hand during traffic jams and are cheaper and faster. Then, the disruptor (Uber) was disrupted by Gojek.” (P7)

“Currently, technological development involves new parties coming into the market with new ideas and business models.” (P7)

3.11.4. Consolidation

Consolidation is yet to be observed in Malaysia as far as the mPayment industry is concerned. Currently, Malaysia is still evolving to grab revenue and gain market share. In Malaysia, a user is presented with the three best options using mobile devices as mobile payment options (e.g., wallets, banks, and credit cards). The Malaysian market is user-driven, depending on the usage of mobile payment options. Although the mobile payment evolution is transitioning, the ability to sustain itself in the industry depends on the users. There are no clear winners to ascertain consolidation in the mPayment sector, as the market is still evolving and waiting for users to dictate clear successors. Each service provider is competing to obtain a market share to sustain in the market.

“A clear way to go is consolidation. Not just in Fintech or just payments, but essentially there are too many different applications for making a payment today.” (P10)

“...So we can see consolidations in different kinds of markets. Malaysia is not a very good discussion per se because we do not have clear successors just yet” (P10).

4. Conclusions

mPayment market development based on RQ1 is translated into three development phases corresponding to market force changes. Commercial market development involves commercial policy development while informing retail trend development. Market developments in the commercial environment are proven through 1) enforcement, 2) e-commerce evolution, 3) convenience, 4) the use of mobile phones as consumer products, and 5) being disadvantaged if not part of the race. mPayment is transitioning to become a critical mode of payment.

Commercial policy development entails 1) regulation as safeguards, 2) the eKYC framework, and 3) regulatory sandboxing in response to the market dynamics uncovered under commercial market development as dictation of controls while enabling mPayment evolution. As the m-payment market begins to evolve, controls must certainly become more consumer-centric by influencing the processes within the service provider system rather than by displaying financially centric policy. Commercial trend development includes 1) democratized services, 2) self-organized markets, and 3) market disruptors. Market disruptors can provide insights into market evolution in the coming years to elucidate service providers on features that transpire into being part of the ecosystem.

5. Recommendations

The three-commerce environment developmental factors - 1) Commercial environment development; 2) Commercial policy development; and 3) Commercial trend development implicating the adoption of mPayment in Malaysia depicts the strong need for rationalizing government dictatorship, i.e., public policies, governance structures, regulatory frameworks, and market dictatorship, i.e., innovation actors (mobile applications), systems functions reflecting market dynamics and evolving landscape, in order to benefitting mPayment consumers and nation at large. Otherwise, mPayment will take longer time to be realized.

Ethical considerations

Not applicable.

Conflict of Interest

The authors declare no conflicts of interest.

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