Adoption of digital payments at the merchant level: A structured literature review

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Philosophy (Evidence Based Management).

30 June 2025

Abstract

The adoption of digital payments remains below expectations globally, and we do not fully understand why that is the case. Extensive research has been done at the consumer level, but little focus has been given to other stakeholders in the payment ecosystem, including merchants. Digital payments adoption research at the merchant level is emerging; however, it is fragmented across multiple disciplines and lacks a common understanding of the factors that enable or hinder adoption, contributing to a lack of a holistic understanding of digital payments adoption and the continued low adoption globally. This structured literature review is conducted across five disciplines and includes 59 research articles consolidating the literature on digital payments adoption at the merchant level in the payment ecosystem. Using inductive thematic analysis, the literature review identified enabling and hindering factors under the themes of structural factors, experiential factors, adoption theory factors, socioeconomic factors and the merchant and consumer interplay. The theory, context and methodology (TCM) approach is applied to the thematic analysis process to ensure a comprehensive and structured approach in the multidisciplinary research. Future research domains are identified for researchers, policymakers, and practitioners on structural factors, merchant-level research in Africa, and the interplay between merchants and consumers in the payment ecosystem.

Keywords

Digital payments, merchant level, adoption, enabling factors, hindering factors

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Philosophy [Evidence Based management] at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

30 June 2025

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List of abbreviations

ABDC	Australian Business Deans Council
AJG	Academic Journal Guide
DOI	Diffusion of Innovation
ICT	Information and Communication Technology
PRISMA	Preferred Reporting Items of Systematic Review and Meta-Analysis
UTAUT2	Unified Theory of Acceptance Theory
TAM	Technology Adoption Model

TBP	Theory of Planned Behaviour
TCM	Theory, Context and Methodology
TTF	Task-technology Fit
SLR	Structured Literature Review

1. Introduction

Technological innovation created digital finance that provides access to financial products and services delivered through digital and electronic channels and systems (Alkhowaiter, 2020; Lashitew et al., 2019; Libaque-Saenz et al., 2024; Shaikh et al., 2022). The interaction of parties in digital financial activities results in digital payments. Digital payments are defined as transactions initiated, processed, and concluded between two parties through a digital or electronic device (Alkhowaiter, 2020; Dimitrova, 2024; Kajol et al., 2022; Teng & Khong, 2021). The mobile phone is the most utilised electronic device in digital payments (Behera & Kumra, 2024; Shaikh et al., 2022). Using digital payments requires active adoption, which entails the willingness to accept the innovation (Talwar et al., 2020) and translates into usage for personal and commercial benefits (Aurazo & Gasmi, 2024).

The global payments ecosystem has evolved significantly due to advances in technology, strategic government programmes, economic inclusion agendas and interest from private and public institutions (Alkhowaiter, 2020; Aurazo & Gasmi, 2024; Kajol et al., 2022). In the payments ecosystem, digital payments adoption research has predominantly focused on the consumer. This is evidenced by the notable volume of empirical research and the publication of several systematic literature reviews in the past five years (Alkhowaiter, 2020; Behera & Kumra, 2024; Kajol et al., 2022; Sant'Anna & Figueiredo, 2024; Shaikh et al., 2022; Souiden et al., 2021; Talwar et al., 2020). However, the payments ecosystem requires multiple stakeholders to participate for digital payments adoption to be successful (Teng & Khong, 2021). The focus on the consumer has left a gap in understanding the other stakeholders (Alkhowaiter, 2020; Behera & Kumra, 2024; Kajol et al., 2022; Kumar et al., 2019; Souiden et al., 2021). Digital payments adoption is not only a consumer consideration. Digital payments operate in a bilateral market between consumers and merchants of the payments ecosystem (Behera et al., 2023; Lee et al., 2019; Libaque-Saenz et al., 2024).

The extensive focus on consumer adoption and little attention on the merchant has impacted digital payments adoption, noticeable by the below-expectation adoption levels globally (Jean Pierre & Mombeuil, 2023; Kajol et al., 2022; Libaque-Saenz et al., 2024; Teng & Khong, 2021). Research on digital payments adoption at the merchant level has gained traction; however, it remains fragmented across multiple disciplines and lacks alignment and

a common understanding of the key factors that enable or hinder adoption (Kajol et al., 2022; Mishra et al., 2022; Moghavvemi et al., 2021; Singh & Sinha, 2020). It is important to understand adoption factors at the merchant level (Libaque-Saenz et al., 2024; Teng & Khong, 2021) because, in the payment ecosystem, if merchants do not accept and make digital payment methods available, consumers cannot use them to transact, resulting in a negative impact on the overall adoption of digital payments (Aurazo & Gasmi, 2024; Mishra et al., 2022; Teng & Khong, 2021; Zaffar et al., 2019; Zhang & Mao, 2020).

We do not fully understand merchant-level digital payments adoption. I conducted the structured literature review (SLR) across five disciplines, namely Marketing, Information Systems, Strategy, Business Management and Organisational Behaviour. I used thematic analysis to review the literature, which is predominantly qualitative at the merchant level. I overlayed the thematic analysis with the theory, context and methodologies (TCM) approach (Behera & Kumra, 2024; Paul & Criado, 2020) to ensure a consistent and comprehensive approach to the multidisciplinary review and to bring consolidation, structure and alignment to the fragmented literature (Behera & Kumra, 2024; Paul & Criado, 2020; Shaikh et al., 2022).

The SLR aims to advance the common understanding of the fragmented extant knowledge on the factors that enable and hinder digital payment adoption by merchants and the impact it has on the bilateral market between consumers and merchants in the payment ecosystem (Alkhowaiter, 2020; Libaque-Saenz et al., 2024; Raj et al., 2024). Beyond understanding the current state of the literature, the review identifies domains for future research (Hiebl, 2023; Kraus et al., 2020; Sauer & Seuring, 2023; Snyder, 2019) that will advance the focus and understanding of merchant-level adoption of digital payments in the payments ecosystem (Alkhowaiter, 2020; Kumar et al., 2019; Libaque-Saenz et al., 2024).

The SLR aims to answer the following review questions:

RQ 1: What research has been done on digital payments adoption at the merchant level?

RQ 2a: What is the context of digital payments adoption at the merchant level?

RQ 2b: What theories are applied to digital payments adoption at the merchant level?

RQ 2c: What methodologies are used in digital payments adoption research at the merchant level?

This paper is organised into the methodology section, where I discuss the search strategy followed for the sample literature, as well as the review methodology choices made. The methodology section also details the thematic analysis process that was applied to analyse the literature. The third section comprises the literature review conducted. I structured the literature review using the TCM approach. In the synthesis section, I integrate the literature review by highlighting the discussion on key adoption factors across the five disciplines, and I compare and contrast the key adoption factors in the literature on consumer adoption and merchant adoption. I then synthesise the relationship between merchants and consumers in the payments ecosystem. Lastly, in the future research and conclusion section, I provide recommendations for future research based on the opportunities identified in the literature and conclude with the contributions made by the study.

2. Methodology

For a search strategy to be deemed transparent and credible, it should outline the search keywords, review period, platforms used, inclusion and exclusion criteria and the process of finding the articles included in the literature review (Fan et al., 2022; Hiebl, 2023; Rojon et al., 2021).

The Preferred Reporting Items for Systematic Reviews and Meta-Analysis framework (PRISMA) was used because it facilitates a structured, transparent and robust literature search and review process supported by the PRISMA framework and the methods section of the "PRISMA 2020 item checklist" (Page et al., 2021, p. 4) as illustrated in Figure 1 below (Behera & Kumra, 2024; Kajol et al., 2022; Moher et al., 2010; Page et al., 2021).

2.1. Inclusion criteria

Digital payments adoption is an intermediate and multidisciplinary construct (Behera & Kumra, 2024), as evidenced by the increasing volume of research across disciplines, with fragmented language and limited common understanding among practitioners and scholars (Behera & Kumra, 2024; Singh & Sinha, 2020; Snyder, 2019). Research disciplines where existing empirical and systematic literature reviews on consumer adoption have been published, as can be seen in Table 1, were a good starting point for finding literature on merchant-level digital payments research. This is because these disciplines are already researching and discussing digital payment adoption, and they are conducting research at the merchant level.

Table 1: Research disciplines inclusion

Discipline included	Justification
Marketing	Discipline where systematic literature reviews on digital payments have been published and because research is increasingly taking place on both consumer and merchant adoption of digital payments.
Information Systems	Discipline where recent systematic literature reviews on digital payments have been published. In addition, Information Systems research on digital payments is included because it

	focuses on the interaction between information, people, technology, and processes. Therefore, the discipline orientation lends itself well to the objectives of this structured literature review
Strategy, Business Management and Organisational Behaviour	Disciplines where systematic literature reviews on digital payments have been published and research is increasingly taking place. The discussion is on both consumer and merchant adoption. Strategy, Business Management and Organisational Behaviour are included because they cover breadth and depth of the merchant context and lend themselves to an inherent multidisciplinary orientation.

I adopted a database-driven approach using Scopus to ensure wide coverage of the fragmented digital payments language, therefore reducing the risk of excluding relevant sources (Ewald et al., 2022; Hiebl, 2023; Paul et al., 2021). The chosen database is electronic, which increases accessibility (Kraus et al., 2020). Scopus provides metadata, enhancing the literature transparency and traceability (Kraus et al., 2020; Paul et al., 2021; Souiden et al., 2021). The database covers high-quality journals that are relevant to the research construct (Paul et al., 2021; Souiden et al., 2021). Scopus's source title capabilities are useful for refining the literature search for the chosen five disciplines identified in Table 1.

Search word synonyms noted in Table 2 below, and various permutations using Boolean "AND" and "OR" were applied to ensure coverage of the fragmented language and reduce the risk of missing relevant literature (Behera & Kumra, 2024; Kajol et al., 2022; Pickering & Byrne, 2014; Sauer & Seuring, 2023; Souiden et al., 2021). The literature search period applied was 2019 to 2025, covering relevant and recent literature on the topic (Hiebl, 2023). The quality of the literature was determined by applying peer-review filtering and selecting articles from high-ranking journals (Kraus et al., 2020) through a combination of 3 to 4* from the Academic Journal Guide (AJG) (*Academic journal guide 2024*, 2024) and A to A* from the Australian Business Deans Council (ABDC) (ABDC journal quality list, 2022). Reference tracing, from high-ranking relevant articles, was used to identify additional relevant literature (Hiebl, 2023). The PRISMA framework approach, illustrated in Figure 1, was applied to select the articles included in the sample. The eligibility of articles was determined by first reading the abstract, discussion and conclusion sections of the articles (Hiebl, 2023).

Beyond the eligibility phase, the full article was read to determine overall relevance to the review questions and inclusion in the literature sample.

Table 2: Search keywords

Search Keywords Digital synonyms	Search Keywords Mechanism synonyms	Search Keywords Merchant synonyms
Digital	Payments	Merchant
Mobile	Banking	Retailer
M-	Receipts	Agent
Smart	Money	Enterprise
Online		Shop
Electronic		

Recommendations on the number of relevant articles required for a robust, structured literature review range from 33 to 55, depending on the maturity of the research construct (Hiebl, 2023; Sauer & Seuring, 2023). The included literature sample consists of empirical research articles and systematic literature reviews that contribute to answering the review questions. The review is conducted at the merchant level; however, consumer-level literature that contributes to understanding merchant adoption and the relationship between the merchant and consumer was included. The literature review comprises 59 research articles across the chosen five disciplines. This sample size is justifiable based on the intermediate maturity of the digital payments adoption construct in the merchant context (Hiebl, 2023).

2.2. Exclusion criteria

I removed duplicate articles. Non-rated journal articles were excluded because the quality of the articles is hard to determine. Grey literature, defined as literature published outside academic platforms (Rojon et al., 2021), was excluded because such literature does not undergo robust quality reviews and has an increased risk of not being traceable (Hiebl, 2023; Rojon et al., 2021). Digital payments adoption in large enterprises was excluded because the adoption considerations and context differ from those of merchants and would divert the focus from the chosen context of the merchant, as defined in the literature review section below. Articles that are not written in English were excluded due to language barriers, noting that most scholarly research is documented in English (Behera & Kumra, 2024; Souiden et

al., 2021). I excluded the Information Technology discipline because it focuses on the technology of digital payment platforms, not on how digital payment mechanisms are being used. Technology is not the focus of this structured literature review. Although digital payments originated in the Finance discipline, I excluded it because this structured literature review does not focus on the financial and commercial aspects of digital payments.

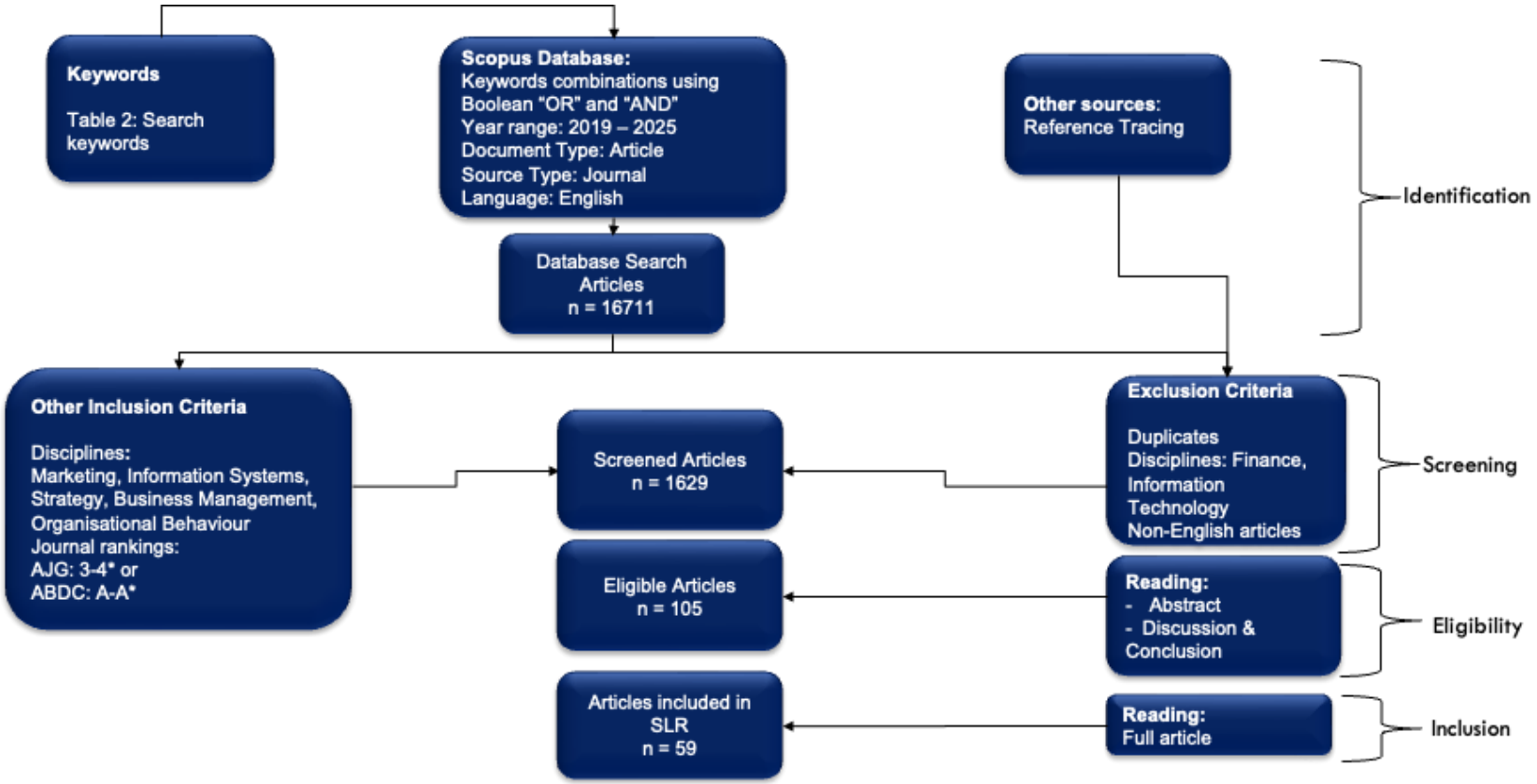

Figure 1: PRISMA Framework of the literature sample

2.3. Data analysis

Thematic analysis is used to identify patterns and themes in the narrative of qualitative research (Saldaña, 2013; Snyder, 2019; Sovacool et al., 2023). The adoption literature at the merchant level is predominantly qualitative. The structured literature review questions seek to understand and consolidate existing knowledge across multiple disciplines. The combination of qualitative research and multidisciplinary literature in the context of this SLR is suited to the inductive thematic analysis approach (Saldaña, 2013). The thematic analysis was conducted across five disciplines, namely Marketing, Information Systems, Strategy, Business Management and Organisational Behaviour.

Thematic analysis is an inherently cyclical process (Sovacool et al., 2023) that must be supported by a well-defined coding schedule because it is important to keep track of the codes created, their descriptions and to manage the codes through the numerous literature analysis cycles (Saldaña, 2013). The thematic analysis process started with defining descriptive codes (Sovacool et al., 2023). The descriptive codes were identified and refined from the literature throughout the analysis cycles. The descriptive codes were used to tag and create links in the literature through an iterative process (Fereday & Muir-Cochrane, 2006; Saldaña, 2013; Sovacool et al., 2023).

The first coding cycle applied descriptive and succinct codes about what the literature is saying (Saldaña, 2013). In the subsequent cycles, most of the codes stood independently. Some codes were merged into code groups based on their similarities. Further iterations clustered the codes and code groups into categories using similarity criteria and pattern recognition (Saldaña, 2013). The categories were synthesised into two overarching themes (Saldaña, 2013). I refer to the overarching themes as enabling and hindering factors in the literature review section that follows. The enabling and hindering factors were further categorised into four cluster themes, which I unpack in detail in the literature review section.

The thematic analysis was further organised using the theory, context, and methodology (TCM) approach (Behera & Kumra, 2024; Paul & Criado, 2020; Shaikh et al., 2022) to shape the themes in a comprehensive and structured manner based on the presence and

prevalence of the TCM elements across the multidisciplinary literature (Jones & Gatrell, 2014; Kajol et al., 2022; Pickering & Byrne, 2014; Secundo et al., 2020).

Lastly, I conducted an adoption factors and citation mapping on key adoption factors to determine their presence and prevalence in the multidisciplinary discussions (Pickering & Byrne, 2014; Secundo et al., 2020). I have included the key factors and citation mapping in Appendix 1. The synthesis of the key factors and citation mapping is discussed in the synthesis section.

2.4. Methodology Limitations

The literature review process has an inherent bias that must be managed at all times (Pickering & Byrne, 2014). The thematic analysis process was a new undertaking and is subject to my limited experience and interpretation bias. As the literature analysis process progressed, periodic submissions were made to the research supervisor and feedback was received on robustness (Fereday & Muir-Cochrane, 2006; Saldaña, 2013) and to ensure appropriate conclusions were drawn from the analysis process.

3. Literature Review

This literature review unpacks the factors that drive or impede the adoption of digital payments at the merchant level. The literature for this review was sourced from multiple disciplines, namely Marketing, Strategy, Information Systems, Business Management and Organisational Behaviour. I chose to structure the review using the theory, context and methodology (TCM) approach (Behera & Kumra, 2024; Paul & Criado, 2020; Shaikh et al., 2022) to ensure a comprehensive and logical organisation of the multidisciplinary literature (Behera & Kumra, 2024; Shaikh et al., 2022). Through the thematic analysis process, I identified two overarching themes, namely, enabling and hindering factors. Through an iterative process, the overarching themes were further classified into four theme clusters, namely structural factors, theory-based factors, experiential factors and socioeconomic factors.

In this literature review section, I begin by defining the context of the level of analysis at the merchant level and digital payments in the payment ecosystem. I then focus on the various considerations that enable and hinder merchant adoption and anchor them under the theory and context elements of the TCM approach (Behera & Kumra, 2024; Paul & Criado, 2020; Shaikh et al., 2022). I use the theory and context of the TCM approach to discuss the enabling and hindering factors under the four theme clusters. I address the methodologies element of the TCM approach separately. I conclude by integrating the strands of the literature review in Figure 2, which illustrates how the adoption factors manifest through the TCM elements and the theme clusters in the literature reviewed.

3.1. Contextualising the merchant level and digital payments in the literature

There is no universal definition of merchant. The search keywords for the literature include the word merchant and other synonyms. In the search results, several papers state that merchants are enterprises or business entities characterised by subsistence businesses that operate on limited resources and are mostly managed by the owner (Eiriz et al., 2019; Owalla et al., 2022). Their business models entail low-value transactions based on a limited basket of goods (Adhikary et al., 2021; Mishra et al., 2022; Moghavvemi et al., 2021; Raj et

al., 2024; Singh & Sinha, 2020). These merchants tend to be localised and sell fast-moving goods and services in small communities (Aithal et al., 2023; Pal et al., 2020). They tend to have a direct relationship with their customers, with no intermediation and are the sole decision-makers in the business (Owalla et al., 2022). For this paper, I have adopted the merchant characteristics definition as I have described above.

The literature further states that merchants, as defined above, are reluctant to adopt digital payment solutions, necessitating research to understand the factors and reasons that drive or hinder the adoption of digital payments at the merchant level in the payment ecosystem. Understanding the reasons for merchant adoption or non-adoption is important because, in many countries globally, merchants are key to the economy. They start new ventures and provide income-generating products and services as well as employment (Adhikary et al., 2021; Anaza et al., 2022; Behera & Kumra, 2024; Owalla et al., 2022). Digital payments can facilitate merchant economic inclusion through solutions that transcend physical currency, space and distance (Aurazo & Gasmi, 2024; Mishra et al., 2022; Shaikh et al., 2023; Wu & Tang, 2022). Yet, digital payments adoption is seen more in formal urban markets than in small, remote and informal markets (Mishra et al., 2022; Raj et al., 2024).

Extant literature positions digital payments as user technology, fulfilling the role of enabling two parties to digitise the flow of funds for the payment of goods or services (Shankar et al., 2021) in the bilateral market of the payment ecosystem (Behera et al., 2023; Lee et al., 2019; Libaque-Saenz et al., 2024). This literature review focuses on the merchant and digital payments context as stated above.

3.2. Theories used in merchant digital payments adoption research

I observed in the extant merchant literature that research applies theory-based factors; however, it leverages different theories to build the argument, instead of one specific adoption theory. The literature highlights five adoption theories as prevalent in merchant adoption; however, their application is limited because they are predominantly consumer-oriented (Behera & Kumra, 2024; Kajol et al., 2022; Teng & Khong, 2021).

The most prominent adoption theories applied are the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT2), the Theory of Planned Behaviour (TPB) (Aithal et al., 2023; Singh & Sinha, 2020), the Diffusion of Innovation Theory (DOI) (Adhikary et al., 2021; Behera & Kumra, 2024; Kajol et al., 2022; Moghavvemi et al., 2021) and to a lesser extent, Task-technology Fit (TTF) (Isharyani et al., 2023; Raj et al., 2024). Theory-based factors are applied in a limited capacity to merchant adoption research (Mishra et al., 2022). As a result, very few literature papers reviewed specify and apply a specific adoption theory at the merchant level.

3.2.1. Enabling theory-based factors at the merchant level

Structural factors are a fundamental consideration in digital payments adoption. Extant literature suggests structural considerations are not only physical infrastructure but also include legislation and regulation required to enable digital payments adoption. Extant literature also considers the combination of infrastructure, legislation and regulation as necessary facilitating conditions (UTAUT2 theory) (Kajol et al., 2022; Owalla et al., 2022) for the successful adoption and proliferation of digital payments (Adhikary et al., 2021; Isharyani et al., 2023; Kumar et al., 2025; Kumar et al., 2020; Mishra et al., 2022).

The first structural factor is digital enablement infrastructure, defined as the physical capabilities required to access digital payment solutions and for digital transactions to take place in the payments ecosystem. Across the reviewed literature, the most notable enabling infrastructure includes electricity and information and communication technology (ICT), comprising the internet and data services, mobile networks and mobile phones (Behera & Kumra, 2024; Jean Pierre & Mombeuil, 2023; Kumar et al., 2025; Mishra et al., 2022; Shaikh et al., 2022). In certain geographies, banking infrastructure is also important because digital payment solutions legally require a bank account as a store-of-value to transfer funds from payer to receiver (Aurazo & Gasmi, 2024; Kumar et al., 2025; Mishra et al., 2022).

The second structural factor and facilitating conditions (UTAUT2 theory) (Kajol et al., 2022) are legislation and regulation from governments and central banks required to enable digital payments. In the literature, legislation and regulation considerations are skewed towards consumers and are addressed in a limited and fragmented manner in the merchant context

(Aurazo & Gasmi, 2024; Mishra et al., 2022). Emerging research shows national programmes led by governments, central banks and regulators, underpinned by enabling legislation and regulation, are key drivers of successful large-scale adoption of digital payments. This is evidenced by digital payments programmes and adoption successes in the Asia-Pacific region and South America (Adhikary et al., 2021; Aurazo & Gasmi, 2024; Kajol et al., 2022; Mishra et al., 2022; Shaikh et al., 2022).

Perceived trust, a variable of the Theory of Planned Behaviour (TPB) (Jean Pierre & Mombeuil, 2023; Kajol et al., 2022), is a significant enabling factor of digital payments adoption at the merchant level. It defines the extent to which adoption of technology is based on confidence that what is being offered will deliver on the promise (Jean Pierre & Mombeuil, 2023; Kajol et al., 2022). Perceived trust is a complex factor that manifests through multiple factors working in combination.

The literature states that the cornerstone of trust in the relationship between merchants and customers is built over time through frequent interactions (Dimitrova, 2024; Eiriz et al., 2019; Handarkho, 2021; Kumar et al., 2025; Wu & Tang, 2022). The introduction of digital payments changes the dynamic of the relationship because it introduces a new and unfamiliar factor into an existing relationship (Wu & Tang, 2022). To build trust in digital payments, a new relationship must develop between the merchant and the customer, led by the existing trust and mutual endorsement that the digital payment solutions will deliver on the promises to both the merchant and customer. In this case, the trust that exists in the relationship translates into facilitating trust in digital payment solutions (Handarkho, 2021).

Another factor of perceived trust (Jean Pierre & Mombeuil, 2023; Kajol et al., 2022) is access to information and knowledge because it enables the merchant to gain confidence through understanding and enables informed decision-making on the adoption of digital payments(Coco et al., 2024; Dalton et al., 2024; Isharyani et al., 2023; Kumar et al., 2020; Mishra et al., 2022; Singh & Sinha, 2020).

The literature also states that perceived trust (Jean Pierre & Mombeuil, 2023; Kajol et al., 2022) is built on the merchant's lived experiences through the availability and reliability of digital payment services (Alkhowaiter, 2020; Dimitrova, 2024; Libaque-Saenz et al., 2024;

Mishra et al., 2022; Teng & Khong, 2021). System performance, uptime and consistent delivery against service level agreements impact performance expectancy (UTAUT2 theory) (Alkhowaiter, 2020; Kajol et al., 2022) and perceived trust over time. This is because delivery commitment builds trust and confidence in the digital payment solutions being offered (Alkhowaiter, 2020; Jean Pierre & Mombeuil, 2023; Kajol et al., 2022; Libaque-Saenz et al., 2024). In addition, good customer service and responsiveness to queries are important trust factors, again emphasising that delivery against the promise matters to the merchant (Lee et al., 2019; Teng & Khong, 2021; Wang & Lai, 2020).

The merchant literature identifies two other prevalent theory-based factors, perceived ease of use and perceived usefulness, from the Technology Adoption Method (TAM) theory (Alkhowaiter, 2020; Kajol et al., 2022; Libaque-Saenz et al., 2024). These two factors are associated with whether digital payment solutions are easy to integrate into the merchant's business and whether they are compatible with existing systems to fulfil the functions required by the merchant (Dimitrova, 2024; Kaur, Dhir, Bodhi, et al., 2020; Lee et al., 2019).

Perceived ease of use and perceived usefulness (TAM theory) (Alkhowaiter, 2020; Kajol et al., 2022; Libaque-Saenz et al., 2024) have also been viewed through the lenses of interoperability, standardisation and ubiquity. Interoperability and standardisation are defined as the ability for different technology platforms to interact with each other and exchange information seamlessly (Aurazo & Gasmi, 2024; Libaque-Saenz et al., 2024). Interoperability and standardisation underpin ease of use because they eliminate the need for merchants to acquire and use multiple digital payment solutions. Furthermore, interoperability and standardisation influence the size of the network that can be accessed because they enable users to access multiple networks seamlessly in an interconnected manner (Adhikary et al., 2021; Alkhowaiter, 2020; Jean Pierre & Mombeuil, 2023; Kamdjoug et al., 2021; Libaque-Saenz et al., 2024). This has positive benefits on economies of scale in the payment ecosystem (Shaikh et al., 2022).

In addition to interoperability and standardisation, ubiquity is a third factor of perceived ease of use and perceived usefulness (TAM theory) (Alkhowaiter, 2020; Kajol et al., 2022; Libaque-Saenz et al., 2024). Ubiquity means that usage capability and user experience are available in a similar manner, irrespective of the platform used (Shaw et al., 2022). This is important because merchants and their customers are not required to learn different

processes on different platforms to transact with each other (Kumar et al., 2025; Mishra et al., 2022). As a complement to interoperability, ubiquity brings consistency in processes and user experience, which builds confidence and drives usage of digital payments. Ubiquity is also a factor of effort expectancy (UTAUT2 theory), which is the extent to which technology requires effort to understand and use it effectively (Alkhowaiter, 2020; Kajol et al., 2022). The combination of standardised, interoperable solutions that are ubiquitous provides the most seamless and efficient digital payment experience and reduces effort expectancy (UTAUT2 theory). It is a sought-after combination required to enable the adoption of digital payments at the merchant level (Kamdjoug et al., 2021; Kumar et al., 2025; Mishra et al., 2022; Moghavvemi et al., 2021; Wu & Tang, 2022).

The literature states that merchants must derive value from adopting digital payments. Through the lenses of performance expectancy (UTAUT2 theory) (Alkhowaiter, 2020; Jean Pierre & Mombeuil, 2023; Kajol et al., 2022), merchants consider whether adopting digital payments will improve their business performance in the form of financial value. Relative advantage (DOI theory) (Alkhowaiter, 2020; Jean Pierre & Mombeuil, 2023; Kajol et al., 2022) pertains to whether the digital solutions offered will perform better than existing payment solutions, through ease of use and efficiency (Alkhowaiter, 2020; Isharyani et al., 2023; Jean Pierre & Mombeuil, 2023; Kajol et al., 2022; Kaur, Dhir, Bodhi, et al., 2020).

Although limited in the merchant literature, trialability and observability from the Diffusion of Innovation (DOI) theory (Alkhowaiter, 2020; Kajol et al., 2022) apply to merchant adoption considerations. Trialability is the extent of exposure to technology before commitment to adopt and observability is the degree to which the function and outputs of the technology can be seen in action (Gerli et al., 2022; Isharyani et al., 2023; Neumeyer et al., 2020; Teng & Khong, 2021). These enabling factors are limited in most markets because the solution provider models seldom accommodate trial periods and expect adoption to be outright. Providing trialability and observability to merchants can be complementary to training and awareness, by increasing user knowledge and confidence in adopting digital solutions (Coco et al., 2024; Dalton et al., 2024; Gerli et al., 2022; Wang & Lai, 2020).

3.2.2. Hindering theory-based factors at the merchant level

The literature notes some adoption factors as dual-sided, meaning they can be enabling or hindering. Product complexity, lack of interoperability and standardisation lead to hindering factors of low levels of perceived ease of use and low perceived usefulness (Adhikary et al., 2021; Jean Pierre & Mombeuil, 2023; Kumar et al., 2025; Kumar et al., 2020; Moghavvemi et al., 2021). The proliferation of multiple solutions adds complexity to the ecosystem, leading to inconvenience, confusion and limits the building of good usage habits and confidence in digital payment solutions (Behera et al., 2023; Jiang & Murmann, 2022; Kaur, Dhir, Singh, et al., 2020; Kumar et al., 2025), which ultimately impedes adoption.

Digital payment solutions provide significant benefits to the payment ecosystem; however, they also have a negative side anchored in the risks posed to users. Perceived risk (TPB theory) (Alkhowaiter, 2020) is defined as the extent to which adoption of technology can result in negative experiences and losses. In the merchant literature, it manifests in concerns about data privacy, lack of security and financial losses that can be incurred (Aithal et al., 2023; Alkhowaiter, 2020; Giovanis et al., 2019; Mogaji & Nguyen, 2022). Perceived risk negatively affects trust in digital payment systems (Giovanis et al., 2019; Handarkho, 2021). The increased prevalence of digital data breaches raises legitimate concerns about data protection and security because data breaches can result in financial losses for merchants and customers who are already financially sensitive (Adhikary et al., 2021; Jean Pierre & Mombeuil, 2023; Kajol et al., 2022; Kumar et al., 2020).

Fraud is the most significant concern in perceived risk (TPB theory) (Alkhowaiter, 2020), and it negatively impacts perceived trust (TPB theory) (Jean Pierre & Mombeuil, 2023; Kajol et al., 2022) in digital payment solutions and processes (Alkhowaiter, 2020; Anaza et al., 2022; Kumar et al., 2025; Mogaji & Nguyen, 2022; Singh & Sinha, 2020). In the merchant context, false authenticity is a prevalent fraud scenario, which entails falsifying digital payments for goods and services, thus deceiving the merchant (Kumar et al., 2025). Fraud enabled through the theft of personal and financial information is a growing concern in the adoption of digital payment solutions (Behera & Kumra, 2024; Kajol et al., 2022; Wu & Liu, 2023).

Perceived risk (TPB theory) (Alkhowaiter, 2020) is heightened by a lack of training, awareness and skills for good security and data privacy practices (Aithal et al., 2023; Giovanis et al., 2019; Kaur, Dhir, Singh, et al., 2020; Raj et al., 2024). The literature further argues that a lack of effective structural facilitating conditions (UTAUT2 theory) (Kajol et al., 2022) in the form of legislation and regulation to address security risks increases the perceived risk (Alkhowaiter, 2020) of digital payments adoption (Jean Pierre & Mombeuil, 2023; Mohamed, 2023). Low investment in training and education in the communities where digital payment services are offered perpetuates perceived risks and hinders the adoption of digital payment solutions (Isharyani et al., 2023; Jean Pierre & Mombeuil, 2023; Mishra et al., 2022; Neumeyer et al., 2020).

Revisiting effort expectancy (UTAUT2 theory) (Alkhowaiter, 2020; Kajol et al., 2022) and relative advantage (DOI theory) (Alkhowaiter, 2020; Jean Pierre & Mombeuil, 2023; Kajol et al., 2022), existing and effective payment solutions impact the adoption of digital payment solutions (Alkhowaiter, 2020; Kajol et al., 2022). The usage habits entrenched in incumbent solutions, like cash, which is already trusted, make it difficult to adapt to and adopt digital payment solutions (Adhikary et al., 2021; Kumar et al., 2020; Mogaji & Nguyen, 2022; Singh & Sinha, 2020; Wang & Lai, 2020). In deriving value from relative advantage (DOI theory) (Alkhowaiter, 2020; Jean Pierre & Mombeuil, 2023; Kajol et al., 2022), it is expected that merchants who adopt digital payment solutions can also use them in the value chain to pay for stock (Libaque-Saenz et al., 2024). However, merchants are subjected to entrenched traditional payment methods on the procurement side, where suppliers insist on cash payment for stock. This further hinders digital payment adoption because merchants cannot fully leverage the efficiency of digital payments. This diminishes the relative advantage of digital payment solutions (Aithal et al., 2023).

On the opposite side of relative advantage (DOI theory) (Alkhowaiter, 2020; Jean Pierre & Mombeuil, 2023; Kajol et al., 2022) and perceived value are the investment and cost considerations of digital payment solutions. Capital investment, maintenance and operating costs are important considerations because small merchant businesses operate on limited financial resources and are cashflow sensitive (Adhikary et al., 2021; Isharyani et al., 2023; Moghavvemi et al., 2021; Raj et al., 2024; Singh & Sinha, 2020). There is some consensus in the literature that investment and operating costs are influenced by the compatibility and ease of integrating digital payment platforms with existing systems. Meaning the more

disparate and incompatible digital solutions are to existing systems, the more costly they become to operate and maintain. Therefore, perceived value diminishes at the merchant level (Jean Pierre & Mombeuil, 2023; Kamdjoug et al., 2021; Moghavvemi et al., 2021; Raj et al., 2024).

3.3. Context factors of merchant-level digital payments adoption

In the literature analysis, the context element of the TCM approach (Paul & Criado, 2020) was applied to enabling and hindering structural factors, experiential factors and socioeconomic factors. The experiential factors are mainly based on the merchant's lived experiences, perceptions and values.

3.3.1. The enabling context of structural factors at the merchant level

In the successes of digital payments in South America and the Asia-Pacific region, governments and central banks not only implemented enabling legislation and regulation but also provided the physical infrastructure required for the national programmes (Aurazo & Gasmi, 2024; Libaque-Saenz et al., 2024; Mishra et al., 2022; Teng & Khong, 2021). The implemented regulatory frameworks go as far as making participation and provision of infrastructure mandatory for certain types of private sector institutions to facilitate the scaling and availability of the solutions in the market. Regulation has also been used to encourage healthy competition and collaboration amongst participants in the payments ecosystem (Aurazo & Gasmi, 2024; Shaikh et al., 2022).

Several enablers are deployed through regulation. Through licensing and regulatory oversight, governments can facilitate market participation and collaboration, especially for small participants who would otherwise be excluded because they would not be able to compete against large financial institutions and service providers (Aurazo & Gasmi, 2024; Lashitew et al., 2019; Libaque-Saenz et al., 2024; Teng & Khong, 2021; Tyce, 2020). The regulation goes as far as stipulating digital payment product specifications, interoperability, and data standards to address usability and scalability of digital payment solutions (Aurazo & Gasmi, 2024; Libaque-Saenz et al., 2024; Mishra et al., 2022). Governments have also implemented complementary measures, for example, mandating the provision of training

and awareness programmes to support digital payments adoption objectives (Libaque-Saenz et al., 2024; Mohamed, 2023; Neumeyer et al., 2020; Pal et al., 2021). In some instances, governments also regulate the costs and fees that can be charged for digital payment solutions as part of their adoption-enabling strategies (Aurazo & Gasmi, 2024; Dalton et al., 2024; Mohamed, 2023).

In the context of merchant adoption, a well-established legislative and regulatory landscape provides trust and confidence that there are rules and oversight in place to ensure digital payment solutions are delivered safely, securely and responsibly from credible service providers (Behera & Kumra, 2024; Dimitrova, 2024; Mishra et al., 2022). Therefore, enabling legislation and regulation can foster trust in institutions and digital payment solutions at the merchant level (Mishra et al., 2022; Wu & Tang, 2022).

3.3.2. The enabling context of experiential factors at the merchant

A different consideration from the theory-based factors suggests that interoperability and standardisation are infrastructure and regulatory factors (Aurazo & Gasmi, 2024; Grzybowski et al., 2023; Libaque-Saenz et al., 2024). Governments and regulators are increasingly considering their role in fostering interoperability and standardisation amongst digital payment solutions because of the growing concern that a lack of interoperability stifles scalability, economies of scale and competition (Aurazo & Gasmi, 2024). Therefore, the literature suggests interoperability considerations for infrastructure through the interoperability of mobile networks accessed through mobile phones to conduct digital payments. It also suggests interoperability for digital data standards for the exchange of transaction information between the payer and payee, irrespective of the platforms used. Lastly, infrastructure interoperability is suggested for digital payment solution platforms so that the merchant can receive payments from all customers seamlessly, even if customers are using different digital payment service providers (Aurazo & Gasmi, 2024; Grzybowski et al., 2023).

The context of interoperability and data standardisation extends further through the enhancement of transparency and availability of user information. However, in contrast to transparency, data privacy is also an important consideration because it determines whether

information about individuals and their transactional behaviour can be shared and with whom it can be shared (Behera & Kumra, 2024; Dimitrova, 2024; Kajol et al., 2022; Shaw et al., 2022). Literature on legislation, regulation and the role of institutions suggests that governments and the private sector must consider interoperability and data standardisation in conjunction with addressing concerns about data privacy and the risk of personal data exploitation (Pal et al., 2021). Literature goes further and suggests that governments should implement legislation and regulations that address digital payments data risk due to the potential to carry personal and financial data, which can be exploited negatively (Aurazo & Gasmi, 2024; Grzybowski et al., 2023; Jean Pierre & Mombeuil, 2023; Shaw et al., 2022; Teng & Khong, 2021). The literature concludes that security policies and protocols that protect privacy are a serious consideration and must be incorporated into digital payment solutions as a mandatory requirement, and be facilitated through legislation and regulation (Alkhowaiter, 2020; Jean Pierre & Mombeuil, 2023; Kamdjoug et al., 2021; Pal et al., 2021; Shankar et al., 2020).

The discussion on digital payments in the payment ecosystem cannot be had without discussing cash. Cash is a long-standing and trusted mechanism of payment globally. However, cash as a traditional payment mechanism entails notable costs and complexity for the merchant. Extant literature argues that digital payments have notable benefits over cash. Merchants receiving cash for payment have the added hassle of needing to keep small-denomination currency on hand (Alkhowaiter, 2020; Jean Pierre & Mombeuil, 2023; Kajol et al., 2022). Merchants also risk losing sales if they do not have small-denomination currency because customers opt not to buy or go elsewhere (Pal et al., 2020). Merchants are also faced with necessary bank visits, which incur logistical costs and impact business hours because of distance (Aithal et al., 2023; Grzybowski et al., 2023; Kumar et al., 2025; Mishra et al., 2022). Digital payments offer convenience, efficiency and even real-time payment at the exact price with no cash-handling required (Aurazo & Gasmi, 2024; Dalton et al., 2024; Libaque-Saenz et al., 2024; Srivastava et al., 2025; Zaffar et al., 2019). Digital payments also provide a safety factor to merchants, not having to keep cash on hand, and protect them from criminal activities associated with cash (Dalton et al., 2024; Lashitew et al., 2019; Libaque-Saenz et al., 2024; Mishra et al., 2022).

3.3.3. The enabling context of socioeconomic factors

Through the thematic analysis process, I identified a category of adoption factors, which are commonly classified as socioeconomic factors. In the literature, common socioeconomic factors include age, gender, level of education and social context. In addition, I identified merchant-specific socioeconomic factors, namely business income and the geographical business location (Jean Pierre & Mombeuil, 2023). In the literature, socioeconomic factors work with each other and in conjunction with other adoption factors in the enabling context.

The literature suggests that younger, male merchants with higher levels of education are faster adopters of digital payments (Alkhowaiter, 2020; Grzybowski et al., 2023; Jean Pierre & Mombeuil, 2023; Pal et al., 2020). These merchants also tend to seek out and adopt technology (Libaque-Saenz et al., 2024). The literature further suggests the importance of indirect socioeconomic factors, where merchants exposed to supportive young and educated people in their families or community tend to be more confident in adopting digital payment solutions (Aithal et al., 2023; Handarkho, 2021; Zhang & Mao, 2020). Supported by literature on enabling structural factors, merchants in more geographically urban locations have better access to adoption-enabling infrastructure, knowledge and training support due to higher levels of investment in urban areas (Alkhowaiter, 2020; Grzybowski et al., 2023; Lashitew et al., 2019; Pal et al., 2020).

Merchant socioeconomic factors work in conjunction with subjective norms (TPB theory) and social influence (UTAUT2 theory), defined as the influence of others on the adoption behaviour of an individual (De Luna et al., 2019; Kumar et al., 2025; Libaque-Saenz et al., 2024; Zhang & Mao, 2020). Through the network effect, the merchant's positive experiences and word of mouth can influence fellow merchants and consumers to adopt digital payments (Shankar et al., 2020).

3.3.4. The hindering context of structural factors at the merchant level

In this section, the discussion on hindering structural factors focuses on the lack of key infrastructure enablers, such as ICT, mobile network access and mobile phones and financial infrastructure, previously identified as enablers (Adhikary et al., 2021; Aurazo &

Gasmi, 2024; Moghavvemi et al., 2021; Shaikh et al., 2022). The extant literature states that infrastructure challenges are common in remote areas and informal markets due to low infrastructure investment by governments and the private sector (Kumar et al., 2025; Mishra et al., 2022; Pal et al., 2020; Raj et al., 2024; Shaikh et al., 2023). The literature states that in developing economies, mobile phones are the main means of access to the internet (Grzybowski et al., 2023), and the use of mobile phones is dependent on the enabling infrastructure of mobile networks, which are less prevalent in remote areas (Grzybowski et al., 2023; Philip & Williams, 2019).

In the enabling factors section, I discussed the considerations of legislation and regulation. In the literature on successes achieved globally, legislation and regulation consideration is skewed towards the consumer, with little attention given to merchant requirements (Mishra et al., 2022; Teng & Khong, 2021). This leads to the argument that a lack of clear legislation and regulation on digital payments hampers the creation of conducive environments for the successful proliferation and adoption of digital payments at the merchant level (Kumar et al., 2020; Kumar et al., 2019; Moghavvemi et al., 2021). The literature on successful legislative and regulatory interventions suggests that without robust legislation and regulatory oversight, healthy competition and collaboration are limited, and market forces can become onerous, driving exclusivity and hampering participation (Aurazo & Gasmi, 2024; Lashitew et al., 2019; Tyce, 2020). The lack of clear legislation and regulation further perpetuates the lack of trust in digital solutions because of the perception that no one is looking out for the best interests of the payment ecosystem and users (Aurazo & Gasmi, 2024).

In a contrary view, the literature suggests that excessive legislation and over-regulation can result in an unsustainable digital payments ecosystem. When legislation and regulatory requirements become onerous, participants will opt out, resulting in a negative impact on the objectives of inclusive and scalable payments ecosystems (Aurazo & Gasmi, 2024). The lack of robust legislation and regulation is noted as a hindering factor of digital payment adoption; however, overly legislated and regulated payment ecosystems also pose a threat to the successful proliferation and adoption of digital payment solutions.

Financial institutions have been at the forefront of providing digital payment solutions (Shaikh et al., 2022). However, they have not succeeded in achieving the expected adoption of digital payments globally. There is consensus in the literature that financial institutions

and payment service providers have also predominantly oriented their solutions towards the consumer (Kajol et al., 2022; Teng & Khong, 2021). Merchants have been overlooked, contributing to the low adoption of digital payment solutions in the payments ecosystem (Dalton et al., 2024). Another institution-oriented hindering factor is the lack of trust in financial service providers due to negative prior experiences. The lack of trust in institutions translates into to lack of trust in their offerings and hinders the adoption of digital payment solutions in favour of known and trusted solutions like cash (Aithal et al., 2023; Aurazo & Gasmi, 2024).

3.3.5. The hindering context of experiential factors at the merchant

There is consensus in the literature that investment and operating costs are influenced by the simplicity and ease of integrating digital payment solutions with existing systems (Jean Pierre & Mombeuil, 2023; Kamdjoug et al., 2021; Moghavvemi et al., 2021; Raj et al., 2024). Disparate systems with high integration costs and operational costs drive the preference for existing traditional solutions over digital payment solutions because the merchants cannot rationalise the time and financial costs against the perceived value of digital payment solutions (Alkhowaiter, 2020; Kaur, Dhir, Singh, et al., 2020; Kumar et al., 2025; Libaque-Saenz et al., 2024).

Looking further into costs, the literature states that access to digital enabling infrastructure and procurement thereof is a significant cost consideration for merchants (Adhikary et al., 2021; Jean Pierre & Mombeuil, 2023; Mishra et al., 2022). Other hindering costs include merchant training costs, ongoing operational costs and service provider fees (Behera et al., 2023). Merchant businesses operating on low margins, with limited financial resources, are cashflow sensitive and therefore, training costs, ongoing costs and service fees are important considerations and hinder adoption if they are deemed unaffordable (Behera et al., 2023; Isharyani et al., 2023; Jean Pierre & Mombeuil, 2023; Mishra et al., 2022; Raj et al., 2024).

Digital payments offer important data for record-keeping and business management. The payments are digitally recorded and provide accurate transaction information to the merchant (Aithal et al., 2023; Dimitrova, 2024; Kumar et al., 2025; Ma & Fildes, 2020; Mishra

et al., 2022). Inversely, transparency is also perceived as negative by merchants because they may not want their income tracked to avoid tax liability (Aurazo & Gasmi, 2024; Mishra et al., 2022). Sensitivity about data privacy may perceive record-keeping transparency as a negative factor of digital payment solutions because of the ability to carry and store information that the merchant does not want the authorities and criminals to access (Dalton et al., 2024; Dimitrova, 2024; Mishra et al., 2022).

3.3.6. The hindering context of socioeconomic factors at the merchant level

There is a contrary argument that digital payment solutions can have a negative impact by facilitating the exclusion of non-adopting merchants and consumers from the economy (Dimitrova, 2024; Kumar et al., 2025; Mishra et al., 2022). The literature suggests this mainly applies to merchants and consumers who lack financial and technical knowledge and skills, and is further observed in older merchants and females (Grzybowski et al., 2023; Isharyani et al., 2023; Mogaji & Nguyen, 2022). Technological knowledge and skills in the merchant context extend beyond the digital payment solution and understanding how to utilise it. It also entails knowledge and awareness of how to access the enabling infrastructure, like ICT, mobile networks and mobile phones (Eiriz et al., 2019; Gerli et al., 2022; Neumeyer et al., 2020; Pal et al., 2021). The literature further argues that a lack of financial resources also limits access to infrastructure and the knowledge required to take advantage of digital payment solutions (Coco et al., 2024; Mishra et al., 2022; Neumeyer et al., 2020; Owalla et al., 2022).

The network effect can work against adoption. Negative experiences can result in negative word of mouth and hinder adoption by other merchants and consumers (Aithal et al., 2023; Fauzi & Sheng, 2022; Grewal et al., 2020; Kaur, Dhir, Singh, et al., 2020).

3.4. Methodologies applied in merchant-level research

Extensive research has been done on the consumer-level adoption of digital payments. This is evident through the volume of quantitative empirical research and numerous systematic literature reviews published in multiple disciplines. Merchant-level research is predominantly

conducted through qualitative research, mainly through interviews. The extant literature on merchant research also notes hybrid research approaches, where the research begins with a qualitative, exploratory approach, followed by quantitative confirmation research. The extant literature on merchant adoption is still characterised by qualitative research because it is intermediate and insights are still developing through exploratory research (Behera & Kumra, 2024; Isharyani et al., 2023; Mishra et al., 2022). Adoption theory at the merchant level is deemed emerging, as evident in the lag in theory-based research on merchant adoption of digital payments (Adhikary et al., 2021) and the limited application of holistic adoption theories, in favour of the theory-based factors approach (Mishra et al., 2022).

3.5. Concluding the literature review

The multidisciplinary literature review focuses on the merchant-level factors that enable or hinder digital payments adoption in the payment ecosystem. The adoption factors are structured using theory, context and methodology elements of the TCM approach (Behera & Kumra, 2024; Paul & Criado, 2020; Shaikh et al., 2022) to provide a structured and comprehensive approach across the multidisciplinary literature. The context considerations were further grouped into enabling and hindering factors under the theme clusters of structural, experiential, and socioeconomic factors. Figure 2 below illustrates the integrated view of the themes that emerged from the literature and how they manifest as hindering or enabling under the theory, context and methodology approach (Behera & Kumra, 2024; Paul & Criado, 2020; Shaikh et al., 2022).

Adoption theories are applied in research at the merchant level; however, in a limited capacity because they are mostly oriented towards consumer application (Behera & Kumra, 2024; Kajol et al., 2022; Teng & Khong, 2021). Merchant literature applies adoption theories at a factor level and tends to combine factors from multiple theories in the research, rather than focusing on a specific theory.

I observed that structural factors overlap in theory and context considerations in the merchant literature. The literature classifies structural factors as a combination of physical infrastructure, legislation and regulation (Adhikary et al., 2021; Isharyani et al., 2023; Kumar et al., 2025; Kumar et al., 2020; Mishra et al., 2022). Physical infrastructure is essential to digital payments adoption and is an enabling and hindering factor. The lack of access to key

enabling infrastructure is a hindrance to digital payment adoption for consumers and merchants. The literature suggests structural factors of legislation and regulatory considerations have been skewed towards the consumer, and the merchant requirements are mostly overlooked. Overregulation can also be a result of limited consideration because of a lack of attention and understanding, resulting in legislation and regulation that are onerous and discouraging to participants in the payment ecosystem. This results in legislation and regulation manifesting more as hindrances in the merchant context.

Experiential factors are part of the context element of TCM (Paul & Criado, 2020) and are mostly driven by lived experiences, values, perceptions and capabilities that influence experience. They can manifest as enablers and hindrance factors. The literature notes that the most notable experiential factors relate to usage habits of incumbent solutions, like cash, interoperability and standardisation, ubiquity, investment and costs and risk.

In addition to commonly known socioeconomic factors, merchants have two specific considerations, business income and business location. Socioeconomic factors act in conjunction with other factors to enable or hinder digital payments adoption.

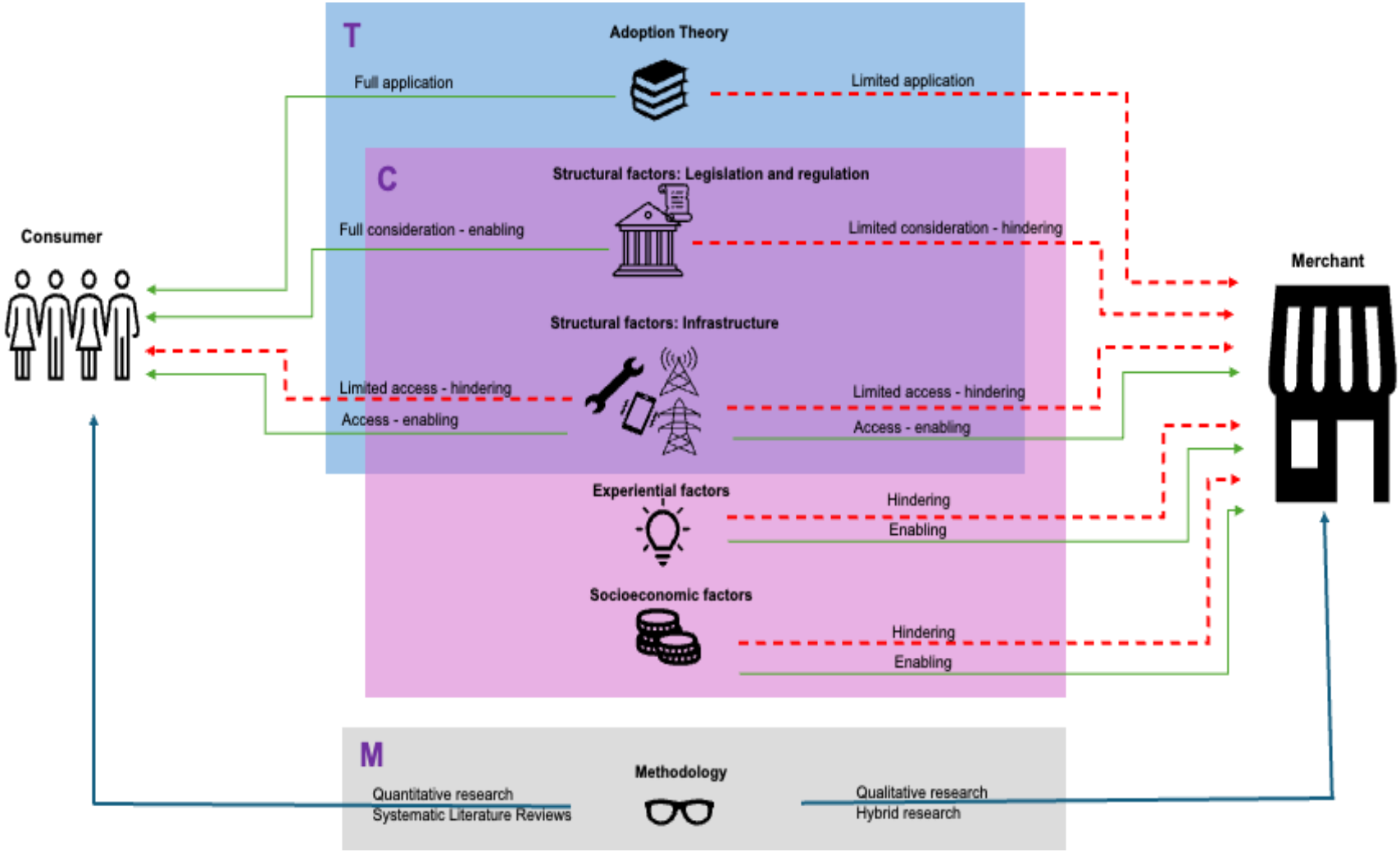

Figure 2: Merchant adoption factors and how they manifest in the literature review

Source: Author's work

4. Synthesis and discussion

In my research, I wanted to understand the research on the role of the merchant in the adoption of digital payments in the payment ecosystem and their contribution to the status of adoption, which is below expectations globally. I included consumer literature in the research sample to the extent that it contributes to answering the research questions on merchant-level adoption.

I adopt an integrative approach to synthesise the review findings. Firstly, I integrate the discussions on the key adoption factors at the merchant level in the multidisciplinary literature. I then compare and contrast consumer and merchant literature through the lens of the key adoption factors that emerged and how they are similar or different. Lastly, in the literature reviewed, I identified a theme I call the merchant and consumer interplay. I synthesise the relationship between the merchant and consumer in the bilateral market of the payment ecosystem through considerations of the interplay theme (Libaque-Saenz et al., 2024). I structured this section by applying the theory and context elements of the TCM approach (Behera & Kumra, 2024; Paul & Criado, 2020; Shaikh et al., 2022).

Through the integration and synthesis of the literature, I identify three areas where research is required in the merchant-level digital adoption literature. The first area is the facilitating conditions of legislation and regulation. The second relates to the dearth of adoption literature at the merchant level in Africa, and the third area arises from the lack of attention and, therefore, lack of understanding of the interplay between the merchant and consumer on the adoption of digital payment solutions in the payments ecosystem.

4.1. Integrating the multidisciplinary discussion and literature juxtaposition

The focus of my research is merchant adoption. However, in my research, I reviewed consumer literature to the extent that it contributes to the understanding of merchant adoption and highlights the disparity in consumer research advancement compared to merchant research in digital payments. I observed that in the context of the bilateral market

in the payment ecosystem, (Behera et al., 2023; Libaque-Saenz et al., 2024) the merchant context cannot be fully understood in isolation from the consumer.

Consumer adoption of digital payments is well studied and understood, as noted through the volume of empirical research and systematic literature reviews published (Alkhowaiter, 2020; Behera & Kumra, 2024; Kajol et al., 2022; Sant'Anna & Figueiredo, 2024; Shaikh et al., 2022; Souiden et al., 2021). In comparison, merchant adoption lacks similar attention, which impacts the understanding of the merchant context of digital payments adoption. The lack of attention and understanding has resulted in merchants being overlooked on critical aspects that have an impact on their adoption and the overall adoption of digital payments in the payments ecosystem.

I conducted a multidisciplinary literature review because digital payments adoption at the merchant level is still intermediate and fragmented across multiple disciplines. The disciplines were identified through literature already prevalent in the consumer adoption conversation, namely Marketing, Information Systems, Strategy, Business Management and Organisational Behaviour.

In Tables 3 and 4, I apply the theory and context approach of TCM to integrate how the key theory-based and context adoption factors manifest in the discussions taking place in the multidisciplinary literature and how they compare and contrast at the merchant and consumer levels.

Table 3: Multidisciplinary discussion, comparison and contrast of theory-based factors at the consumer and merchant levels

Adoption factor	Multidisciplinary discussion	Similarities in consumer and merchant literature	Differences in consumer and merchant literature
Adoption theories	All the disciplines discuss and apply adoption theories and the most prevalent are UTAUT2, TAM, TPB, and DOI.	There are factors in the adoption theories that apply to consumers and merchants alike and manifest in a similar manner.	Consumer literature applies adoption theories in a holistic manner, notable in the volume of quantitative research applying adoption theories. There are factors in the adoption theories that are specifically consumer oriented and have not been applied to merchant research. Merchant literature applies adoption theories at a factor level rather than holistically. Research draws factors from multiple theories and applies them in exploratory and insights building research, which is predominantly qualitative.
Facilitating conditions (UTAUT2 theory) – infrastructure, legislation and regulation	All the disciplines recognise infrastructure, legislation and regulation as fundamental facilitating conditions for adoption of digital payments. All disciplines discuss them extensively in both the	There is consensus that facilitating conditions namely infrastructure, legislation and regulation are essential enabling requirements for digital payment proliferation and adoption by both consumers and merchants in the payments ecosystem.	Most of the literature on legislation and regulation is from research done in the Asia-Pacific region and South America Extant literature has robust and focused consumer considerations for legislation and regulation but lacks similar attention in the merchant

Adoption factor	Multidisciplinary discussion	Similarities in consumer and merchant literature	Differences in consumer and merchant literature
(Kajol et al., 2022)	enabling and hindering considerations.	The most prevalent infrastructure considerations include fast and low-cost internet and data services, mobile phones, and mobile networks. Through the lens of the socioeconomic factors, provision of infrastructure is skewed towards urban geographies and therefore geographical location influences whether enabling infrastructure is accessible for merchants and consumers.	context. The limited legislation and regulation consideration in the merchant context contribute to the hindering adoption factors. In addition to legislation and regulation, there is an increasing call for governments to play a more active role in providing enabling infrastructure as part strategic enablement in the merchant context.
Perceived trust (TPB theory) (Kajol et al., 2022)	Perceived trust is a notable factor and it is discussed extensively in all the disciplines. All the disciplines articulate trust as a multifaceted factor that manifests through a combination of other factors.	Trust is one of the most important factors for digital payments adoption for both merchants and consumers. Trust is not a singular, tangible factor. Trust mainly manifests through experiential factors, like the relationship between the merchant and consumer, reliable and consistent delivery of service and the management of security and risk factors. Institutional trust is important for adoption of solutions in the market.	

Adoption factor	Multidisciplinary discussion	Similarities in consumer and merchant literature	Differences in consumer and merchant literature
		Merchants and consumers will not adopt a solution provided by an untrusted institutions.	
Perceived Risk (TPB theory) (Alkhowaiter, 2020)	Perceived risk is discussed the most in the Marketing discipline. This is probably because of the orientation of marketing practitioners focusing on products and the users of the solutions. Fraud is the most prevalent form of perceived risk across the disciplines.	Security is an important consideration in mitigation of perceived risk. Merchants and consumers are sensitive to losses. Fraud is the most prevalent cause of losses and a contributor to lack of trust in digital payment solutions. Data privacy concerns are increasing in consumer and merchant literature as a risk and adoption hindering factor. The literature suggests security protocols must be mandated in the digital payment solutions through product specifications, legislation and regulation.	In consumer literature security and fraud mitigation considerations are being included in legislation and regulation. Merchant legislation and regulation lags behind. Merchant literature highlights the crucial role that can be played by governments in addressing perceived risk through legislation and regulation at the merchant level.
Perceived ease of use and perceived usefulness (TPB theory)	Perceived ease of use is a prevalent multifaceted factor. It is discussed extensively in the Information Systems and Marketing literature, but it is limited in the Strategy,	Ease of use manifests through a combination of factors working in conjunction with each other.	In the consumer context, ease of use and usefulness are mainly perceived through whether the solution fits the consumer's usage requirements and lifestyle.

Adoption factor	Multidisciplinary discussion	Similarities in consumer and merchant literature	Differences in consumer and merchant literature
(Alkhowaiter, 2020; Kajol et al., 2022; Libaque-Saenz et al., 2024)	Business Management and Organisational Behaviour literature. This could be because this factor deals with product, processes and usage considerations, and therefore, is more relevant in the Information Systems and Marketing literature.	It has strong influence on perceptions of usefulness of digital solutions which then drives adoption and usage.	In the merchant context, ease of use manifests through multiple factors like systems compatibility and interoperability because it is a measure of whether incumbent and new systems can integrate seamlessly and work together to facilitate payments between merchants and consumers.
Social influence and (UTAUT2 theory) subjective norms (TPB theory) (De Luna et al., 2019; Kumar et al., 2025; Libaque-Saenz et al., 2024; Zhang & Mao, 2020)	These factors are linked to the experiential network effect and are discussed mostly under Information Systems and Marketing disciplines.	In both merchant and consumer literature the network effect, through friends, family and the community, plays a strong role in influencing the adoption of digital payments.	Consumers are influenced by family, friends and merchants with whom they have a trusted relationship to adopt digital payments. Merchants are influenced through customer demands, fellow merchants and competition to adopt digital payments.

Table 4: Multidisciplinary discussion, comparison and contrast of context factors at the consumer and merchant levels

Adoption factor	Multidisciplinary discussion	Similarities in consumer and merchant literature	Difference in consumer and merchant literature
Interoperability, standardisation, and ubiquity	All disciplines discuss interoperability, standardisation, and ubiquity notably. The Marketing discipline stands out as the most extensive coverage of these factors. I attribute this to the product and user orientation that underpins the discussion of digital payments in the Marketing discipline. Information Systems discuss these factors the least, which is contrary to the discipline's focus on the interaction between information, people, technology, and processes.	These factors are closely associated with the enabling structural factor, infrastructure and user experience considerations for both the merchant and consumer. These factors drive economies of scale and have a positive impact on the usage effort and cost of solutions in the market.	In consumer literature, interoperability and standardisation are emerging as considerations in in legislation and regulation and contribute to the enabling considerations. Ubiquity is discussed in the context of its benefits to consumer experience and usage effort. In merchant literature, all three factors are discussed in the context of infrastructure capabilities, seamless multi-network and cross-network access to achieve scalability of the solutions in the market. Interoperability and data standardisation are important for data transparency at the merchant level for business management purposes and to allow cross-platform payments seamlessly in the payment ecosystem.

Adoption factor	Multidisciplinary discussion	Similarities in consumer and merchant literature	Difference in consumer and merchant literature
Information, knowledge and awareness	All disciplines discuss information, knowledge and awareness extensively because these factors are complementary to other key adoption factors like infrastructure access, addressing security and risk concerns, ease of use and decision-making.	User education and information availability are important for merchants and consumers because they build the requisite knowledge needed to foster infrastructure access, ease of use and trust in digital payments solutions. Knowledge and awareness are also noted as key mitigating factors against security risks because knowledge enables informed and safe usage. Lack of knowledge and information increases perceived risk due to security concerns. Information, knowledge and awareness are integral to the network effect and word of month in the payment ecosystem. They are also important in the trust relationship between merchants and consumers.	
Incumbent payment solutions	Cash the most discussed and long-standing payment	Cash is a long-standing and trusted payment mechanism in the payment ecosystem.	In merchant literature digital payments offers many benefits over cash including safety considerations

Adoption factor	Multidisciplinary discussion	Similarities in consumer and merchant literature	Difference in consumer and merchant literature
	mechanism discussed across all disciplines.	Digital payments are offered as a cash alternative with notable benefits; however, cash remains trusted and entrenched. Digital payments offer benefits that address the risk and inconvenience of cash handling and cash management for both consumers and merchants.	that protect merchants and consumers from criminal activities associated with cash. The benefits of real-time payment capabilities to the exact amount and record-keeping capabilities are strong advocators for digital payments in the merchant literature.
Investment and ongoing costs	The Marketing discipline discusses investment and costs the most extensively. I also note that the orientation of the discussion on these factors is mostly in the hindering factors. This orientation could be because of the inherent product and market orientation of the discipline, and therefore, these factors are important to the marketing professionals and what they offer to the market. In addition, there is heightened awareness of the below-expectation	Adoption of digital payments requires investment from consumers and merchants. Ongoing usage costs can be onerous depending on the solutions in the market and whether the structural factors are in place to mitigate the financial impact on consumers and merchants. Investment costs are mainly associated with access to enabling infrastructure.	In addition to higher infrastructure investment requirements, merchants have more operating costs considerations than consumers including system operating costs, training costs, integration costs and ongoing service provider costs. In the low-margin and cashflow sensitive merchant business, costs are a significant consideration for digital payment adoption.

Adoption factor	Multidisciplinary discussion	Similarities in consumer and merchant literature	Difference in consumer and merchant literature
	performance of digital payments in the Marketing discipline, and therefore, this could also be driving the focus on addressing hindering factors.		
Merchant socioeconomic factors	The Marketing discipline covers the socioeconomic factors the most extensively. For similar reasons of product and market orientation focus, knowing the composition of the target customer lends itself to socioeconomic information and understanding.	Merchants and consumers share common socioeconomic factors that impact adoption of digital payments namely age, education level, and gender. These factors manifest in similar ways in both consumer and merchant literature. Socioeconomic factors tend to impact adoption in conjunction with other adoption factors. In both consumer and merchant literature males who are younger, with higher levels of education are faster adopters of digital payments.	Merchant literature identifies two merchant-specific socioeconomic factors namely business income and business location. These two factors have an enabling and hindering consideration, mainly associated with access to infrastructure. Business income has a direct impact on investment and cost considerations for the merchant.

4.2. Synthesis of merchant and consumer interplay

There is a definitive relationship between merchants and consumers in the bilateral market of the payment ecosystem (Behera et al., 2023; Libaque-Saenz et al., 2024). In the extant literature, I identified an important theme that emerged from the relationship between merchants and consumers. I call the theme the merchant and consumer interplay. I define interplay as the adoption factors and considerations that are common in the merchant and consumer relationship and have interdependence and mutual influence on their digital payments adoption. The interplay between merchants and consumers does not get sufficient attention in consumer and merchant literature.

Merchants and consumers have similar enabling infrastructure requirements. Merchants required the infrastructure for the supply side to receive payment for goods and services. Consumers require the same infrastructure from the demand side to pay. Access to fast and low-cost ICT, mobile networks and mobile phones is important in the interplay between consumers and merchants to facilitate transactions. A single platform approach can provide beneficial services to the consumer and the merchant and mitigate the hindering factors introduced by multiple and disparate digital payment solutions in the payment ecosystem (Libaque-Saenz et al., 2024; Teng & Khong, 2021).

Access to digital payment solutions facilitated by merchant acceptance in the payment ecosystem has a direct impact on consumer adoption considerations (Libaque-Saenz et al., 2024; Teng & Khong, 2021). To achieve economies of scale, both merchant and consumer adoption of the solution is required because of the volume and cost equation in the market. Higher volumes of transactions reduce the unit cost of transactions, especially on fixed infrastructure and service fees (Teng & Khong, 2021). In an ecosystem where there are multiple solutions in place, interoperability, standardisation and ubiquity enable the benefits of economies of scale because the merchant and the consumer are able to transact seamlessly, irrespective of which platform or service providers they are using (Libaque-Saenz et al., 2024).

The network effect is a notable adoption interplay factor between consumers and merchants. The literature supports the interplay argument, that merchants can influence consumer

adoption by making digital payment solutions available for payment purposes and, therefore, are a direct catalyst for consumer adoption (Behera & Kumra, 2024; Libaque-Saenz et al., 2024; Ma & Fildes, 2020; Zaffar et al., 2019; Zhang & Mao, 2020). Inversely, consumer demand and market competition influence the merchant's decision to adopt (Aithal et al., 2023; Libaque-Saenz et al., 2024). Consumer information on the availability of digital payment services amongst competitors can be used to influence merchant decisions to adopt digital payments (Fauzi & Sheng, 2022; Moghavvemi et al., 2021; Mohamed, 2023; Singh & Sinha, 2020; Srivastava et al., 2025) because the customer can use that information to decide where to buy. Furthermore, the network effect stipulates that, as more people adopt digital payments, they can become ambassadors to attract non-user merchants and consumers because trusted individuals have an inherent advantage in persuading other people to take certain action (Aithal et al., 2023; Dimitrova, 2024; Fauzi & Sheng, 2022; Isharyani et al., 2023; Mishra et al., 2022; Shankar et al., 2020).

Trust is a significant interplay factor and leverages familiarity in the relationship between merchants and consumers built over time. Consumers are inclined to adopt digital payments if trusted merchants offer the capability and advocate for its use (Wu & Tang, 2022). The nuanced manifestation of trust is customer loyalty. In the interplay relationship, customer loyalty can be a catalyst for merchants to adopt digital payments in pursuit of retaining loyal and trustworthy customers (Aithal et al., 2023; Wu & Tang, 2022).

Personalised service is important to both the merchant and the consumer. Digital payment solutions must be relevant by addressing local context and challenges (Aithal et al., 2023; De Luna et al., 2019; Kumar et al., 2025; Lashitew et al., 2019; Pal et al., 2020). Applying local context in designing digital payment solutions is important because it fosters a sense of participation in the local community and what matters to the consumer and the merchant has been taken into consideration when providing solutions. This approach has been proven to improve the probability of adoption (Jiang & Murmann, 2022; Kajol et al., 2022; Kumar et al., 2025; Pal et al., 2020; Shaikh et al., 2023) through subjective norms (TPB theory) and social influence (UTAUT2 theory) (De Luna et al., 2019; Kumar et al., 2025; Libaque-Saenz et al., 2024; Zhang & Mao, 2020). Through the network effect, digital payment solution providers can drive local adoption by offering incentives, rewards and discounts to merchants and their customers to attract them to digital payments (Aithal et al., 2023; Kaur, Dhir, Singh, et al., 2020; Pal et al., 2020; Teng & Khong, 2021; Wang & Lai, 2020).

Information and awareness are interplay factors because they leverage the relationship between the merchant and consumer to build the requisite knowledge needed to build trust and confidence in digital payments usage (Isharyani et al., 2023; Kumar et al., 2020; Shaikh et al., 2023; Singh & Sinha, 2020; Teng & Khong, 2021). Merchants and consumers who are technology and financially literate and help each other with information tend to adopt digital payments more easily and find utility much faster (Adhikary et al., 2021; Aithal et al., 2023; Kumar et al., 2020; Mishra et al., 2022; Souiden et al., 2021).

Investment costs and fees have a notable impact on merchants and consumers because they apply to key enabling infrastructure access and the viability of access and ongoing usage of the digital payment solution (Jean Pierre & Mombeuil, 2023; Mishra et al., 2022; Pal et al., 2020; Singh & Sinha, 2020). Merchant service fees interplay with consumers because of cost transfer through pricing from the merchant to the consumer. Cost transfer makes digital payments unattractive for merchants and their customers (Dalton et al., 2024; Kumar et al., 2025; Pal et al., 2020). Disparate systems increase the cost of digital payments for merchants and consumers because they have to acquire and use multiple platforms to transact (Jean Pierre & Mombeuil, 2023; Kamdjoug et al., 2021; Moghavvemi et al., 2021; Raj et al., 2024). Costs of access and usage have a significant hindering effect on merchant and consumer adoption.

4.3. Strengths and limitations of the study

The strengths of the paper start with the consolidation of the fragmented literature across multiple disciplines. The search for literature across five disciplines was robust and remained true to the search strategy defined. I articulate the findings clearly and bring together the key themes and narrative across the disciplines in a comprehensive and structured approach anchored on the theory, context and methodologies (TCM) approach (Paul & Criado, 2020). The literature used in the review is credible from high-ranking journals with an AJG rankings of 3 to 4* (*Academic journal guide 2024*, 2024) and ABDC rankings of A to A* (ABDC journal quality list, 2022). The PRISMA framework and literature review checklist were applied (Page et al., 2021), providing a robust literature sample and literature review process.

The limitations of this paper can be addressed in future research. The review covers five disciplines. The disciplines were selected based on notable empirical research and systematic literature reviews in consumer adoption research and emerging discussions on merchant adoption. The discipline choices may have excluded research in other disciplines that may be important to the discussion on merchant-level adoption of digital payments.

The applied review period, 2019 to 2025, was informed by scant relevant merchant adoption literature published before 2019 and the notable publication on consumer adoption, including systematic literature reviews published from 2020 to 2024, as the departure point. The period selection may have excluded relevant articles published before 2019.

Thematic analysis was the chosen methodology of analysis due to the qualitative orientation of the literature in the sample. Thematic analysis cannot be used to conduct a quantitative analysis of the merchant literature. Analysis methods that incorporate a quantitative orientation could be complementary to the thematic analysis approach adopted.

5. Future research and conclusion

The global adoption of digital payments falls short of expectations, and we do not fully comprehend why. The literature review indicates that the body of work on adoption at the merchant level is gaining momentum; however, it is still developing across various disciplines and is fragmented and lacks consensus amongst scholars and practitioners.

5.1. Future research domains

The structural factors, mainly legislative and regulatory considerations, are skewed towards the consumer. The consequence is that merchants are overlooked and therefore continue to have challenges with the enabling conditions required to facilitate digital payments adoption. Future research should consider the role of governments and what is required in legislation and regulation to facilitate merchant-level adoption more effectively.

Digital payments adoption at the merchant level is receiving attention in the Asia-Pacific region and South America. There is a dearth of literature on digital payments adoption at the merchant level in Africa. Therefore, there is an opportunity for researchers to explore the context of Africa. Future research should consider the adoption of digital payments at the merchant level on the African continent.

Digital payments adoption at the merchant level cannot be understood in isolation from the consumer context. While the consumer context has been extensively studied, the isolated focus has not yielded adoption success, as evidenced by the lower-than-expected adoption of digital payments globally. In my review, I identified a theme which I call the merchant and consumer interplay, defined as the factors common in the merchant and consumer relationship and have inter-dependence and influence on their digital payments adoption considerations. The interplay between the merchant and consumer is not well understood, as evidenced by the scant literature and assumptions made on merchant and consumer symmetry and synonymous adoption requirements. Future research should explore the interplay theme because, in the bilateral market, merchants and consumers are equally important and influence the adoption of digital payments in the overall payments ecosystem.

5.2. Conclusion

This paper contributes to the literature on merchant adoption of digital payments in several ways. This paper contributes by consolidating the understanding of digital payment adoption literature from the merchant perspective across five disciplines, namely Marketing, Strategy, Information Systems, Business Management and Organisational Behaviour. These disciplines were chosen because there is extensive extant research in the consumer context. However, research on merchant adoption is still emerging and fragmented.

5.2.1. Theoretical significance

Review question RQ1 has been answered by first presenting what is known across five disciplines on digital payment adoption at the merchant level. Secondly, through juxtaposing the key adoption factors in the merchant literature against consumer literature to identify areas of similarity and differences.

The review questions RQ 2a, RQ 2b and RQ 2c are answered by applying the theory, context and methodology (TCM) approach, which is a discipline-agnostic approach and yields a structured and comprehensive review process. The TCM approach highlights that extant adoption theories are skewed towards the consumer and application in the merchant context is limited. Researchers are extracting theory-based factors from multiple theories and applying them to their research. There is a notable overlap between theory and context in the structural factors theme. The synthesis of the digital payments adoption across the five disciplines and the comparison and contrast of the consumer and merchant literature brings consolidation, common understanding and alignment to the fragmented literature. In the context element, the paper synthesises an important theme of merchant and consumer interplay that has not been sufficiently focused on in extant literature.

Thematic analysis was an appropriate approach for a literature that is multidisciplinary and entails mainly qualitative literature. The paper identifies overarching themes that are enabling and hindering factors under the cluster themes theory-based factors, structural factors, experiential factors, merchant socioeconomic factors and the merchant and consumer interplay.

5.2.2. Practical significance

There are research considerations for digital payments adoption, particularly in the facilitating conditions of the role of governments in legislation and regulation at the merchant level. Most of the research has been conducted in the Asia-Pacific region and South America. This can be attributed to the strategic approach taken by governments in these regions. Africa is missing from the digital payments adoption discussion, and this provides opportunities for future research. The identified future research domains provide considerations for researchers, policymakers and practitioners.

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Appendices

Appendix 1: Key adoption factors and citations mapping

Enabling adoption factor	Information systems	Marketing	Strategy & Business management & Organisational behaviour
Perceived Trust (TPB theory)	Alkhowaiter, 2020 Dimitrova, 2024 Kumar et al., 2025 Libaque-Saenz et al., 2024 Mishra et al., 2022; Teng & Khong, 2021 Wu & Tang, 2022	Anaza et al., 2022 Handarkho, 2021 Lee et al., 2019 Shaikh et al., 2022 Singh & Sinha, 2020	Coco et al., 2024 Dalton et al., 2024 Eiriz et al., 2019; Isharyani et al., 2023 Kajol et al., 2022 Kumar et al., 2020 Wang & Lai, 2020
Perceived ease of use and perceived usefulness (TAM theory)	Alkhowaiter, 2020 Dimitrova, 2024 Libaque-Saenz et al., 2024	Adhikary et al., 2021 Jean Pierre & Mombeuil, 2023 Kamdjoug et al., 2021 Kaur, Dhir, Bodhi, et al., 2020 Lee et al., 2019 Shaikh et al., 2022	Aurazo & Gasmi, 2024
Subjective norms (TPB) and social influence (UTAUT2)	De Luna et al., 2019 Kumar et al., 2025 Libaque-Saenz et al., 2024	Shaikh et al., 2022 Zhang & Mao, 2020	
Effort expectancy (UTAUT2 theory)	Alkhowaiter, 2020 Kumar et al., 2025 Mishra et al., 2022; Wu & Tang, 2022	Kamdjoug et al., 2021 Moghavvemi et al., 2021	Kajol et al., 2022
Relative advantage (DOI theory)	Alkhowaiter, 2020	Jean Pierre & Kaur, Dhir, Bodhi, et al., 2020 Mombeuil, 2023	Isharyani et al., 2023 Kajol et al., 2022
Trialability and observability (DOI theory)	Teng & Khong, 2021		Gerli et al., 2022 Isharyani et al., 2023 Neumeyer et al., 2020

Enabling adoption factor	Information systems	Marketing	Strategy & Business management & Organisational behaviour
Structural factors – infrastructure, legislation and regulation	Dimitrova, 2024 Kumar et al., 2025 Libaque-Saenz et al., 2024 Mishra et al., 2022 Teng & Khong, 2021 Wu & Tang, 2022	Adhikary et al., 2021 Behera & Kumra, 2024 Jean Pierre & Mombeuil, 2023 Shaikh et al., 2022	Aurazo & Gasmi, 2024 Isharyani et al., 2023 Kumar et al., 2020 Kajol et al., 2022 Lashitew et al., 2019 Mohamed, 2023 Tyce, 2020
Interoperability, standardisation and ubiquity	Alkhowaiter, 2020 Dimitrova, 2024 Libaque-Saenz et al., 2024 Kumar et al., 2025 Mishra et al., 2022; Teng & Khong, 2021	Adhikary et al., 2021 Jean Pierre & Behera & Kumra, 2024 Mombeuil, 2023 Grzybowski et al., 2023 Kamdjoug et al., 2021 Shankar et al., 2020 Shaw et al., 2022	Aurazo & Gasmi, 2024 Coco et al., 2024 Dalton et al., 2024 Kajol et al., 2022 Pal et al., 2021 Wang & Lai, 2020
Socioeconomic factors	Alkhowaiter, 2020 Libaque-Saenz et al., 2024	Aithal et al., 2023 Grzybowski et al., 2023 Handarkho, 2021 Jean Pierre & Mombeuil, 2023 Zhang & Mao, 2020	Lashitew et al., 2019 Pal et al., 2021
Cash management	Alkhowaiter, 2020 Kumar et al., 2025 Libaque-Saenz et al., 2024 Mishra et al., 2022 Zaffar et al., 2019	Aithal et al., 2023 Grzybowski et al., 2023 Jean Pierre & Mombeuil, 2023 Srivastava et al., 2025	Aurazo & Gasmi, 2024 Dalton et al., 2024 Kajol et al., 2022 Lashitew et al., 2019
Knowledge and awareness	Libaque-Saenz et al., 2024		Coco et al., 2024 Dalton et al., 2024 Gerli et al., 2022 Mohamed, 2023

Enabling adoption factor	Information systems	Marketing	Strategy & Business management & Organisational behaviour
			Neumeyer et al., 2020 Pal et al., 2021 Wang & Lai., 2020

Hindering adoption factor	Information systems	Marketing	Strategy, Business Management, Organisational behaviour
Perceived risk (TPB theory) – fraud, data privacy, security, transparency	Alkhowaiter, 2020 Dimitrova, 2024 Kumar et al., 2025 Mishra et al., 2022	Adhikary et al., 2021 Aithal et al., 2023 Anaza et al., 2022 Giovanis et al., 2019 Handarkho, 2021 Jean Pierre & Mombeuil, 2023 Kaur, Dhir, Singh, et al., 2020 Raj et al., 2024 Singh & Sinha, 2020	Aurazo & Gasmi, 2024 Dalton et al., 2024 Kajol et al., 2022 Kumar et al., 2020 Mogaji & Nguyen, 2022 Mohamed, 2023
Subjective norms (TPB theory) and social influence (UTAUT2 theory)		Aithal et al., 2023 Grewal et al., 2020 Kaur, Dhir, Singh, et al., 2020	Fauzi & Sheng, 2022
Effort expectancy (UTAUT2 theory)	Alkhowaiter, 2020		Kajol et al., 2022
Structural factors – infrastructure, legislation and regulation	Kumar et al., 2025 Mishra et al., 2022 Teng & Khong, 2021	Adhikary et al., 2021 Aithal et al., 2023 2023 Kumar et al., 2019 Moghavvemi et al., 2021 Raj et al., 2024 Grzybowski et al.,	Aurazo & Gasmi, 2024 Dalton et al., 2024 Kajol et al., 2022 Kumar et al., 2020 Lashitew et al., 2019 Pal et al., 2021 Philip & Williams, 2019 Shaikh et al., 2023 Tyce, 2020

Hindering adoption factor	Information systems	Marketing	Strategy, Business Management, Organisational behaviour
Interoperability, standardisation and ubiquity	Alkhowaiter, 2020 Kumar et al., 2025 Libaque-Saenz et al., 2024	Adhikary et al., 2021 Behera & Kumra, 2024 Jean Pierre & Kamdjoug et al., 2021 Kaur, Dhir, Singh, et al., 2020 Moghavvemi et al., 2021 Mombeuil, 2023	Kumar et al., 2020 Jiang & Murmann, 2022
Cash and other mechanisms	Alkhowaiter, 2020 Libaque-Saenz et al., 2024	Adhikary et al., 2021 Singh & Sinha, 2020	Kumar et al., 2020 Mogaji & Nguyen, 2022 Wang & Lai, 2020
Investment and costs	Alkhowaiter, 2020 Mishra et al., 2022	Adhikary et al., 2021 Behera & Kumra, 2024 Jean Pierre & Mombeuil, 2023 Moghavvemi et al., 2021 Raj et al., 2024 Singh & Sinha, 2020	Isharyani et al., 2023
Knowledge and awareness	Mishra et al., 2022	Aithal et al., 2023 Grzybowski et al., 2023 Jean Pierre & Mombeuil, 2023 Kaur, Dhir, Singh, et al., 2020 Raj et al., 2024	Isharyani et al., 2023 Mogaji & Nguyen, 2022 Neumeyer et al., 2020
Socioeconomic factors	Dimitrova, 2024 Kumar et al., 2025 Mishra et al., 2022	Jean Pierre & Mombeuil, 2023	Coco et al., 202 Eiriz et al., 2019; Gerli et al., 2022 Neumeyer et al., 2020