



**STRATEGIC FINTECH ADOPTION AND FINANCIAL
INCLUSION:
AN EVALUATIVE ANALYSIS IN SAUDI ARABIA**

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Abstract

Saudi Arabia has positioned Financial Technology (FinTech) as a central strategic instrument for advancing financial inclusion under Vision 2030, through initiatives including the SAMA Regulatory Sandbox (2018), the Open Banking Policy and Framework (2020–2024), and the National Fintech Strategy (2022). Existing commentary on this initiative is predominantly promotional or descriptive, leaving the relationship between these strategic initiatives and documented financial inclusion outcomes systematically unexamined. This thesis addresses that gap through a secondary-data, multi-case evaluative analysis integrating three theoretical frameworks: Theory of Change/Logic Model, Diffusion of Innovation, and the World Bank/Alliance for Financial Inclusion access-usage-quality framework. Four cases are examined: the SAMA Regulatory Sandbox and Open Banking Initiative, the digital payments/BNPL firms STC Pay and Tamara, the SME/P2P lending platforms Lendo and Forus, and the FinTech Saudi/FSDP national coordinating strategy. Findings indicate that the strategic initiative’s output layer, comprising firm formation, capital mobilization, and digital-transaction growth, has performed strongly against the ecosystem’s own targets. The outcome layer, measured through Global Findex account-ownership data, shows a comparatively modest re-acceleration during the strategic period (2021–2024) relative to the larger pre-strategy gains recorded between 2011 and 2014, and a documented SME credit gap remains only partially addressed. Diffusion of Innovation attributes account for the differential adoption speed observed across the four cases, with consumer payments diffusing fastest and SME credit and regulatory infrastructure diffusing more slowly. These findings are associative rather than causal, consistent with the study’s secondary-data design, and are discussed against the existing global and regional literature. The thesis concludes with strategic recommendations for SAMA, the Capital Market Authority, FinTech Saudi, and the FSDP program office, and identifies directions for future primary-data and comparative regional research.

Keywords: financial inclusion; FinTech; Saudi Arabia; Vision 2030; Diffusion of Innovation; Theory of Change; regulatory sandbox; Open Banking; SME credit access

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List of Abbreviations

Abbreviation	Full Term
AFI	Alliance for Financial Inclusion
AIS	Account Information Services
APA	American Psychological Association
BNPL	Buy-Now-Pay-Later
CMA	Capital Market Authority (Saudi Arabia)
CITC/CST	Communications, Space & Technology Commission (formerly Communications and Information Technology Commission)
DOI	Diffusion of Innovation
FAS	Financial Access Survey (IMF)
FSDP	Financial Sector Development Program
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
IA	Insurance Authority (Saudi Arabia)
IMF	International Monetary Fund
IRB	Institutional Review Board
KPMG	Klynveld Peat Marwick Goerdeler (professional services network)
MENA	Middle East and North Africa
P2P	Peer-to-Peer
PIF	Public Investment Fund (Saudi Arabia)
PIS	Payment Initiation Services
RQ	Research Question
SAMA	Saudi Central Bank (Saudi Arabian Monetary Authority)
SDG	Sustainable Development Goal
SME	Small and Medium Enterprise

Chapter 1: Introduction

1.1 Background of the Study

Saudi Vision 2030, launched on 25 April 2016, committed the Kingdom to economic diversification away from oil dependency. Financial-sector modernization is situated under one of the plan's central pillars, "a thriving economy" (Kingdom of Saudi Arabia, 2016). The Financial Sector Development Program (FSDP), one of Vision 2030's realization programs, translates that pillar into explicit targets, including the expansion of non-cash transactions and the increase of financial inclusion, both treated as indicators of a maturing financial ecosystem (Financial Sector Development Program, 2024; Vision 2030, n.d.). The FSDP's mandate is not limited to fintech: it spans banking, insurance, and capital-markets development jointly, monitored by SAMA, the Capital Market Authority, and the Ministry of Finance, with fintech and financial inclusion constituting a single pillar within this broader program (Arab News, 2025b). This distinction matters for how this thesis's findings should be read: a change in an inclusion outcome coincides with a specific fintech pillar operating alongside concurrent reform in banking and capital markets, a point developed further in Section 4.6 and revisited in the Discussion (Chapter 5).

Financial Technology (FinTech) has been positioned by Saudi policymakers as the principal strategic instrument for achieving the FSDP's fintech-specific targets. The Saudi Central Bank (SAMA) established a regulatory sandbox in 2018, enabling licensed experimentation with novel financial products (SAMA, 2018). An Open Banking Policy followed in 2020 (SAMA, 2020), and by May 2022 a National Fintech Strategy had been formally adopted as an FSDP pillar (Ministry of Finance, 2022). Substantial growth followed across several verticals: digital payment adoption, buy-now-pay-later (BNPL) services, digital wallets, and peer-to-peer (P2P) lending platforms targeting underserved segments such as small and medium enterprises

(SMEs) expanded concurrently, and by end-2024 the ecosystem comprised 261 fintech firms, with 79% of transactions conducted digitally (Fintech Saudi et al., 2025).

Financial inclusion is conventionally defined in terms of access to, usage of, and quality of formal financial services (World Bank, n.d.-b), and development economics has long treated it as a determinant of economic growth. Whether Saudi Arabia's strategic FinTech initiatives have measurably influenced this determinant remains a distinct empirical question, one that the World Bank's Global Findex Database (Demirgüç-Kunt et al., 2022; World Bank, 2025) and the IMF Financial Access Survey (International Monetary Fund, n.d.) render answerable, since both instruments have tracked Saudi financial inclusion indicators over the same period in which these initiatives have operated.

1.2 Problem Statement

Saudi Arabia has committed substantial strategic and regulatory resources to promoting FinTech adoption as a mechanism for advancing financial inclusion. The extent to which this effort has translated into measurable inclusion outcomes has not been examined systematically. The existing literature divides into two categories: promotional reporting produced by industry and government, and purely descriptive market-sizing analysis. Neither category establishes a documented connection between specific strategic initiatives and inclusion outcomes through secondary data and case evidence, a gap this thesis addresses directly.

1.3 Research Questions

- **RQ1:** What strategic FinTech adoption initiatives has Saudi Arabia implemented (2018–present), and what financial inclusion objectives do they explicitly target?
- **RQ2:** What do secondary financial inclusion indicators (account ownership, digital payment usage, SME credit access) show over the period these initiatives have been active?

- **RQ3:** What do case studies of selected Saudi FinTech initiatives/firms reveal about the mechanisms, enablers, and barriers linking FinTech adoption to financial inclusion outcomes?
- **RQ4:** What strategic recommendations follow for policymakers and FinTech stakeholders to strengthen financial inclusion impact going forward?

1.4 Research Objectives

1. To map the strategic FinTech adoption initiatives implemented in Saudi Arabia since 2018 and their stated financial inclusion objectives.
2. To evaluate trends in secondary financial inclusion indicators over the corresponding period.
3. To explain, through multi-case analysis, the mechanisms, enablers, and barriers connecting FinTech adoption to financial inclusion outcomes.
4. To derive strategic recommendations for policymakers and FinTech industry stakeholders.

1.5 Significance of the Study

The existing literature on FinTech-driven financial inclusion in Saudi Arabia and the broader GCC region is predominantly descriptive rather than evaluative. This thesis undertakes an evaluative analysis to address that imbalance. Academically, it integrates Theory of Change, Diffusion of Innovation, and an access-usage-quality framework into a single evaluative approach applied to one country, producing an analytical template that is structurally suited to application in comparable contexts, a transferability claim this single-country study asserts but does not itself test. Practically, the findings are intended to inform strategic decision-making by SAMA, the Capital Market Authority (CMA), FinTech Saudi, and individual FinTech firms, as well as researchers and students examining FinTech policy in other emerging markets. These practical contributions are made concrete in Chapter 6.3's recommendations, which anchor in

existing Saudi instruments already embedded in the Kingdom's regulatory architecture, including the Kafalah SME credit-guarantee program and SAMA's Financial Consumer Protection Principles and Rules. For SAMA and the FSDP program office, the output-outcome distinction developed throughout this thesis (Section 2.4, Chapter 4) offers a concrete addition to existing ecosystem reporting. For FinTech Saudi and individual fintech firms, the case-level Diffusion of Innovation analysis (Sections 4.3–4.7) offers an explanatory account of why consumer-facing verticals have scaled faster than infrastructure or SME-credit verticals, informing product and go-to-market decisions independent of this thesis's inclusion-specific argument.

1.6 Scope and Limitations

This study is bounded to Saudi Arabia and to the period from 2018, when the regulatory sandbox and FinTech Saudi launched, to the present. It relies exclusively on secondary and case-study data; no primary empirical collection methods, such as surveys or interviews, were conducted. This design constraint has a direct methodological consequence: the findings presented here describe association and documented mechanism rather than statistically established causation. The four cases examined, the SAMA Regulatory Sandbox/Open Banking initiative, a digital payments/BNPL firm, an SME/P2P lending platform, and the FinTech Saudi/FSDP national strategy, were selected purposively to represent distinct strategic vectors, not through random sampling, and the resulting findings should accordingly be read as analytically generalizable, not statistically representative.

1.7 Structure of the Thesis

Chapter 2 reviews the literature on financial inclusion, FinTech, and their intersection, develops the theoretical framework underpinning this analysis, and situates Saudi Arabia's fintech trajectory against comparable GCC evidence (Section 2.6). Chapter 3 presents the research

design, case selection rationale, data sources, coding scheme, and analytical methods, including the explicit screening log for candidate cases considered but not selected. Chapter 4 presents findings from the secondary-data trend analysis, including the disaggregated and ceiling-adjusted readings of the account-ownership trend, and the four case studies. Chapter 5 interprets these findings against the theoretical framework and the wider regional and global evidence base. Chapter 6 concludes with a summary of findings, direct answers to the research questions, strategic recommendations anchored in Saudi Arabia's existing regulatory instruments, and directions for future research. Appendices A through E provide consolidated supplementary data tables, a source-verification log, and a case-screening log supporting the analysis in the main chapters.

1.8 Definition of Key Terms

- **FinTech (Financial Technology):** Technology-enabled innovation in financial services that could result in new business models, applications, processes, or products with a material effect on the provision of financial services (Financial Stability Board, 2017).
- **Financial Inclusion:** Access to, usage of, and quality of formal financial services by individuals and businesses (World Bank, n.d.-b; Alliance for Financial Inclusion, 2011).
- **Financial Sector Development Program (FSDP):** One of Saudi Vision 2030's realization programs, tasked with developing a diversified and effective financial sector, including its fintech and financial-inclusion pillars (Vision 2030, n.d.).
- **Regulatory Sandbox:** A controlled regulatory environment allowing licensed live-testing of innovative financial products/services under regulatory supervision, without standard licensing prerequisites, for a defined test window (SAMA, 2018).

- **Open Banking:** A regulatory framework enabling licensed third-party access to customer-permissioned banking data and payment initiation, implemented in Saudi Arabia in phases beginning with Account Information Services (2022) and Payment Initiation Services (2024) (SAMA, 2020, 2022).
- **Buy-Now-Pay-Later (BNPL):** A form of credit that allows a consumer to split a transaction into smaller, typically interest-free installments repaid over time (Consumer Financial Protection Bureau, 2022).

Chapter 2: Literature Review

2.1 Financial Inclusion: Concept, Dimensions, and Measurement

The World Bank defines financial inclusion as the state in which individuals and businesses have access to useful, affordable financial products and services, including transactions, payments, savings, credit, and insurance, delivered responsibly and sustainably (World Bank, n.d.-b). Access and usage constitute distinct constructs, a distinction frequently elided in policy discourse. An individual may hold a formal account without using it meaningfully; earlier rounds of the World Bank's own measurement work identified this pattern among a substantial share of account holders in developing economies (World Bank, n.d.-b). This access-usage distinction motivates the addition of a third dimension, quality, which addresses whether a product serves the user's needs, not merely exists for them on paper. This thesis adopts the resulting access-usage-quality triad as its outcome-measurement lens, a distinction that becomes analytically significant in Chapter 4, where output growth and outcome growth diverge.

The World Bank's Global Findex Database, established in 2011 and now in its fifth round, remains the dominant instrument for measuring financial inclusion at the individual level (Demirgüç-Kunt et al., 2022; World Bank, 2025). It surveys nationally representative adult samples on account ownership, payment behavior, savings, and borrowing, and its most recent round adds a digital connectivity measure, having been designed explicitly to support before/after and cross-country comparison (World Bank, 2025). The International Monetary Fund's Financial Access Survey (FAS) complements Findex on the supply side, aggregating administrative data from financial service providers, including deposit accounts, loan accounts, and ATM and branch density, across more than 160 economies; the IMF identifies Saudi Arabia specifically as a strong reporter of fintech-related variables (International Monetary

Fund, 2025, n.d.). This study draws on both instruments for RQ2: Findex supplies demand-side, household-level data, while FAS supplies supply-side, provider-level data.

A third instrument is relevant to this analysis. The Alliance for Financial Inclusion's Maya Declaration is a voluntary framework under which central banks and regulators, including institutions from developing and emerging economies, commit to measurable financial inclusion targets and evidence-based policymaking (Alliance for Financial Inclusion, 2011). Its emphasis on translating high-level commitments into measurable targets parallels the approach SAMA and the FSDP have taken in Saudi Arabia, discussed in Section 2.5, and it supplies part of the evaluative vocabulary applied here in assessing whether stated strategic objectives have been met.

2.2 FinTech: Definitions, Typology, and Global Trends

The Financial Stability Board (2017) defines FinTech as "technology-enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on the provision of financial services." The Basel Committee on Banking Supervision subsequently adopted the same deliberately broad definition, a choice made because narrower definitions become obsolete as the pace of technological change accelerates. Within this broad category, the academic literature converges on a limited set of recurring verticals: payments; credit, deposit, and capital-raising services, including P2P and crowd-lending; investment management; and insurance (Financial Stability Board, 2017; Ha et al., 2025; Del Sarto & Ozili, 2025). The four cases examined in this thesis correspond directly to this typology, comprising a regulatory/infrastructure case centered on Open Banking, a payments case centered on STC Pay and Tamara, a credit case centered on Lendo and Forus, and a national coordinating strategy centered on FinTech Saudi and the FSDP.

Buy-Now-Pay-Later (BNPL) warrants a specific definition given its prominence in the Saudi case evidence. It constitutes a form of point-of-sale credit that allows a consumer to divide a purchase into smaller, typically interest-free installments repaid over a short period (Consumer Financial Protection Bureau, 2022). BNPL has also been among the fastest-growing FinTech verticals in Saudi Arabia specifically, a pattern exemplified by Tamara's expansion (Chapter 4).

Islamic, Sharia-compliant fintech constitutes a further relevant sub-category, directly relevant to the Lendo case examined in Section 4.5. A jointly produced Global Islamic Fintech Report ranks Saudi Arabia first globally on its Global Islamic Fintech Index, attributing this position to the Kingdom's regulatory frameworks, digital infrastructure, talent availability, market maturity, and access to capital (Sharikat Mubasher, 2026, reporting DinarStandard and Elipses findings). This ranking sits alongside, without independently confirming, this thesis's own finding that Shariah-compliant structuring functions as a Rogers' (2003) compatibility advantage for Lendo specifically (Section 4.5). It situates that single-case finding within a broader pattern of Saudi regulatory strength across the Islamic fintech sector as a whole, so the compatibility advantage identified for Lendo looks like an instance of that wider pattern, not an isolated, firm-specific feature.

Global Findex 2025 data indicate that worldwide account ownership reached 79% of adults, with recent growth concentrated less in raw account-holding than in digital payment usage and, for the first time, a dedicated digital-connectivity measure that reflects the growing centrality of mobile and internet access to financial inclusion (World Bank, 2025). Regionally, fintech funding across the Middle East, North Africa, and Pakistan increased by 335% between 2021 and 2022, and STC Pay was one of only three fintech unicorns to emerge from the region during that period (McKinsey & Company, 2023). Saudi Arabia's fintech growth, examined in detail in Section 2.5, tracks this broader regional acceleration; it is not an isolated phenomenon.

2.3 The FinTech–Financial Inclusion Nexus: Global and Regional Evidence

Whether FinTech adoption causes improved financial inclusion, as distinct from merely correlating with it, remains an open empirical question. A 2025 systematic review of 96 papers indexed across Web of Science, Scopus, and EBSCO identifies a broadly positive but conditional relationship, one contingent on the regulatory environment, digital infrastructure, and financial literacy present in a given market. The review's principal finding is that few of the studies reviewed demonstrate fintech's tangible, mechanism-level impact on inclusion outcomes, as distinct from its mere market presence (Ha et al., 2025). A companion bibliometric analysis raises a related concern: whether fintech reaches marginalized populations or predominantly deepens usage among populations already included. Neither this reach question nor the long-term durability of inclusion gains has received substantial empirical attention (Del Sarto & Ozili, 2025).

At the panel level, econometric evidence from the MENA region supports a positive relationship. Al-Smadi (2023), applying a system-GMM estimator across 12 MENA countries from 2004 to 2020, finds that a composite digital-finance indicator significantly and positively predicts a composite financial inclusion index constructed from access, availability, and usage dimensions. A broader panel of 28 emerging and developing economies from 2011 to 2021, using a comparable system-GMM approach and a PCA-constructed inclusion index, estimates that a 1% increase in a fintech-adoption proxy is associated with a 0.177-unit increase in the financial inclusion index (Mashoene et al., 2025). This finding warrants critical evaluation before being treated as established: it originates from a journal that applies less rigorous editorial standards than the field's principal outlets, and no independent study reviewed here reproduces this coefficient.

A methodologically instructive parallel exists in the qualitative literature. Griffiths et al. (2025), applying a three-stage "Knowledge Café" method to banking and fintech stakeholders across

Vietnam's fintech ecosystem, examine diffusion across seven distinct fintech service domains, payments/transactions, alternative finance (P2P lending and crowdfunding), alternative investments, banking back-office services, financial inclusion, cryptocurrencies, and embedded/business-partner integration, and find markedly uneven maturity across them: payment services attain the highest diffusion, while alternative-finance services capture a substantially smaller share of the market and cryptocurrency and back-office integration remain comparatively nascent. This unevenness is attributed jointly to government regulation, institutional trust, technological infrastructure, demographic factors, and data protection operating at macro, meso, and micro levels, not to any single regulatory-sandbox mechanism. This finding bears on RQ3 by analogy: it examines a different national context (Vietnam) across seven service domains, not a formal cross-national comparison of regulatory sandboxes. Its central pattern, that payments-type services diffuse faster than credit-type services within the same national regulatory environment, nonetheless offers a theoretical basis for anticipating that the four Saudi cases examined here, spanning regulatory infrastructure, payments, and SME credit, may exhibit meaningfully different adoption trajectories despite operating under a common national strategy.

The fintech-inclusion relationship therefore appears measurable and reasonably well-supported at the panel-econometric level. What remains empirically underdeveloped at the single-country, mechanism level is an account of how this relationship operates within a specific national regulatory context, and whether observed growth in fintech activity reflects inclusion gains rather than intensified usage among an already-included population.

2.4 Theoretical Framework

Weiss (1995) argued that program evaluation should render explicit the causal assumptions connecting an intervention to its intended outcomes, rather than measuring outcomes in

isolation. The Kellogg Foundation subsequently operationalized this principle into a standard evaluative chain comprising inputs, activities, outputs, outcomes, and impact (W.K. Kellogg Foundation, 2004). Applied to this study, SAMA's regulatory instruments and FSDP funding and coordination mechanisms constitute the inputs; licensing, sandbox testing, and ecosystem facilitation constitute the activities; the number of licensed fintech firms, capital raised, and digital-transaction share constitute the outputs; changes in account ownership, digital payment usage, and SME credit access constitute the outcomes; and broader, less directly attributable progress toward Vision 2030's financial-sector goals constitutes the impact. This structure organizes the presentation of findings in Chapter 4 and the discussion of effectiveness in Chapter 5.

Rogers's (2003) Diffusion of Innovation theory addresses a distinct analytical question: why, and at what rate, a given fintech innovation spreads through a population of potential adopters. Five perceived attributes, relative advantage, compatibility, complexity, trialability, and observability, provide an analytical vocabulary for explaining differential uptake across the four cases examined here. A payments product such as STC Pay, or a BNPL product such as Tamara, might reasonably be expected to diffuse more rapidly than an SME lending product such as Lendo or Forus, a pattern consistent with the vertical-specific diffusion documented by Griffiths et al. (2025).

A related question concerns the definition of a valid outcome. The World Bank/AFI access-usage-quality framework addresses this question, operationalized through the Global Findex and FAS indicators reviewed in Section 2.1 (World Bank, n.d.-b; Alliance for Financial Inclusion, 2011). A rising fintech-firm count constitutes an output in Logic Model terms; it does not, on its own, constitute evidence of an inclusion outcome, and this distinction is central to the analytical framework applied throughout this thesis.

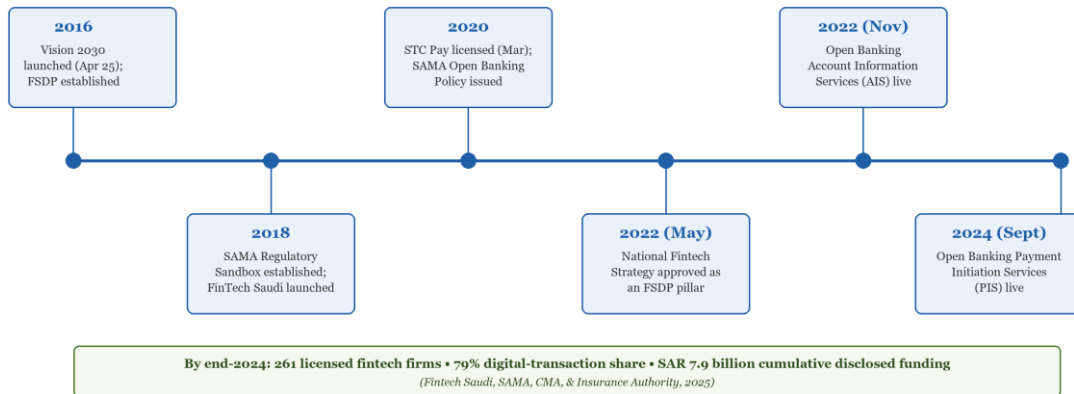
These three frameworks are complementary. The Logic Model provides the overall evaluative architecture; Diffusion of Innovation explains the adoption mechanism operating within the activities-to-outputs stage of that architecture; and the access-usage-quality framework defines the criteria for a valid outcome at the outcomes stage.

2.5 Saudi Arabia's Regulatory Framework for FinTech and Financial Inclusion

Saudi Vision 2030, launched on 25 April 2016, identifies the development of a diversified, technologically modern financial sector as part of its "thriving economy" pillar (Kingdom of Saudi Arabia, 2016). The FSDP translates this objective into explicit targets spanning banking, capital markets, and insurance, with fintech and financial inclusion constituting the primary focus of this analysis (Vision 2030, n.d.).

The regulatory sequence is well documented. SAMA established a fintech Regulatory Sandbox in 2018, permitting licensed live-testing of novel financial products for a defined period without standard licensing prerequisites (SAMA, 2018). An Open Banking Policy followed in 2020 (SAMA, 2020), and by May 2022 the Council of Ministers had formally approved a National Fintech Strategy as a dedicated FSDP pillar, jointly administered by SAMA, the Capital Market Authority, and the FSDP program office (Ministry of Finance, 2022). SAMA subsequently implemented its Open Banking Framework in phases, with Account Information Services operational from November 2022 and Payment Initiation Services from September 2024 (SAMA, 2022). Figure 2.2 presents this regulatory sequence as a timeline, alongside the ecosystem's end-2024 output snapshot detailed below.

Figure 2.2. Saudi Arabia's FinTech Regulatory Timeline, 2016–2024
Key regulatory and strategic milestones referenced throughout Chapters 2 and 4



Source: Kingdom of Saudi Arabia (2016); SAMA (2018, 2020, 2022); Ministry of Finance (2022); Argaam (2020); Fintech Saudi et al. (2025).

This regulatory sequence has produced substantial measurable outcomes according to the ecosystem's own reporting. The 2024 Annual Fintech Report, jointly produced by Fintech Saudi, SAMA, the Capital Market Authority, and the Insurance Authority, records 261 licensed or operating fintech firms by end-2024, representing 21% year-on-year growth that exceeded the program's own 230-firm 2025 target. The report also records 11,046 direct jobs, an increase of 64% year-on-year; SAR 905 million in disclosed 2024 funding alone, against a cumulative total of SAR 7.9 billion, 204% above the 2025 target; 79% of transactions conducted digitally; and open-banking connected accounts that increased from 115,000 in 2023 to 334,000 in 2024 (Fintech Saudi et al., 2025). Independent industry analysis corroborates this funding trend: KPMG reports that Saudi fintechs attracted over US\$1.14 billion in investment between September 2020 and December 2023, with 2023 alone accounting for US\$791 million, a 231% year-on-year increase, while non-cash transactions exceeded 70% of total transactions that same year, two years ahead of the original Vision 2030 target (KPMG, 2024). Industry analysts had previously identified the specific frictions Open Banking was designed to resolve, namely delayed merchant settlement and the absence of a consolidated account view, with early entrants such as Lean identified as pioneers in addressing this problem (Strategy& [PwC Middle East], 2021).

2.6 Prior Studies: Saudi Arabia, GCC, and MENA

Saudi-specific peer-reviewed literature addressing the fintech-financial-inclusion relationship remains scarce. The one study located maps Saudi Arabia's fintech ecosystem against the United Nations Sustainable Development Goals, identifying conceptual linkages to SDG 1 (no poverty), SDG 2 (zero hunger, via agri-fintech), SDG 5 (gender equality), SDG 8 (decent work and economic growth), and SDG 17 (partnerships) (Noreen, 2024); this study offers a valuable conceptual contribution but does not constitute an empirical impact study, and therefore does not directly address RQ2 or RQ3. No Saudi-specific quantitative empirical study meeting this thesis's source-verification standard (Section 3.4) was identified during the literature search; this absence is itself informative and underscores the research gap this thesis addresses (Section 2.7).

Cybersecurity and Sharia-compliance are two further regulatory-barrier considerations that merit brief elaboration here, given their direct relevance to the access-usage-quality framework developed in Section 2.4 and the quality-dimension discussion in Section 4.4. On cybersecurity, SAMA issued a dedicated Cyber Security Framework in May 2017, predating the Regulatory Sandbox by a year, establishing a mandatory governance baseline for all SAMA-regulated entities, including fintech firms and digital banks, which must demonstrate framework compliance prior to licensing. The framework specifies 20 control objectives across four domains, governance and oversight, cybersecurity controls including identity and access management, third-party risk management, and incident response, scored against a five-level maturity scale, and draws on internationally recognized standards including ISO/IEC 27001, the NIST Cybersecurity Framework, PCI-DSS, COBIT 5, and Basel III (Saudi Central Bank [SAMA], 2017). SAMA-regulated entities must additionally report significant cyber incidents within 72 hours. This framework constitutes a further quantified regulatory-quality safeguard in the same category as the BNPL-specific provisions discussed in Section 4.4: it addresses a

documented barrier at the level of regulatory design, though this thesis was unable to locate public aggregate data on cyber-incident frequency, breach rates, or compliance-maturity scores across licensed fintech firms specifically. Consistent with the treatment of BNPL quality data in Section 4.4, cybersecurity outcomes are accordingly acknowledged here as an evidentiary gap rather than a measured finding.

Financial literacy constitutes a second, more directly outcome-relevant barrier. SAMA's own reporting indicates that the share of Saudi adults demonstrating basic financial literacy rose from 30% in 2021 to approximately 38% by 2023, an 8-percentage-point increase over two years, but well short of the 60% target Vision 2030 sets for this indicator (World Exchanges Focus, n.d., reporting SAMA figures). This gap bears directly on the access-usage-quality framework's usage dimension: an individual may hold an account, and even transact digitally, without possessing the literacy required to compare products, recognize an unfavorable fee structure, or use a BNPL facility without risking over-indebtedness, precisely the quality-dimension concern raised in Section 4.4. It also bears on the gender and income disaggregation presented in Table 4.6: this thesis's data collection could not locate a demographic breakdown of financial-literacy rates specific to Saudi Arabia, so it cannot establish whether literacy gaps track the same subgroups as the account-ownership data. This is noted here as a direction for the future research discussed in Section 6.6, since testing it would require literacy data disaggregated by the same demographic categories as Table 4.6, which was not available during this thesis's data collection.

The GCC/MENA econometric evidence reviewed in Section 2.3 (Al-Smadi, 2023; Mashoene et al., 2025) is methodologically stronger: it employs panel system-GMM estimation across many countries, not single-country description. This evidence is not Saudi-specific, however, and pools Saudi Arabia together with countries at markedly different stages of fintech regulatory development. The combination of a thin, uneven-quality Saudi-specific literature

alongside more methodologically rigorous but non-country-specific regional evidence establishes the basis for the novelty of this thesis's single-country, multi-case evaluative design.

A brief comparative glance at the wider GCC context situates Saudi Arabia's fintech trajectory in both scale and inclusion-outcome terms. Bahrain was the first GCC state to establish a fintech regulatory sandbox, launched by the Central Bank of Bahrain in 2017, one year before SAMA's own Sandbox; Tarabut Gateway, discussed in Section 3.3 as an excluded candidate case for this thesis's Case 1, was the Bahraini sandbox's first graduate (Bahrain Economic Development Board, n.d.). The UAE built a substantially larger ecosystem over the same period: the Dubai International Financial Centre alone hosted more than 1,000 fintech, AI, and innovation firms as of 2024, having collectively raised US\$3.3 billion in venture capital, while the Abu Dhabi Global Market hosts a further 300-plus financial firms and the Dubai Financial Services Authority's Innovation Testing Licence, operating since 2017, has accepted more than 80 of over 200 applicant firms (Chambers and Partners, 2025); the UAE overall attracted US\$1.1 billion across 207 fintech startups in 2024 alone (Ken Research, 2026). On firm count and disclosed funding, the UAE's ecosystem is roughly an order of magnitude larger than Saudi Arabia's 261 firms and SAR 7.9 billion cumulative funding reported in Section 4.1.

This scale difference does not translate proportionally into a comparable inclusion-outcome gap, however. World Bank Global Findex account-ownership data, retrieved from the same API source used for Table 4.1 (World Bank, n.d.-a), show UAE account ownership rising from 59.73% in 2011 to a peak of 88.21% by 2017 before easing slightly to 85.74% by 2021, while Bahrain rises from 64.51% (2011) to 82.61% (2017) and remains essentially flat at 82.32% by 2024.

Table 2.1. Account ownership at a financial institution or mobile-money provider, GCC comparison (% of population 15+)

Year	Saudi Arabia	UAE	Bahrain
2011	46.42%	59.73%	64.51%
2014	69.41%	83.74%	81.94%
2017	71.70%	88.21%	82.61%
2021	74.32%	85.74%	—
2024	78.84%	—	82.32%

Note. World Bank DataBank/Global Findex, indicator FX.OWN.TOTL.ZS (World Bank, n.d.-a). UAE 2024 and Bahrain 2021 values were not available in the dataset at the time of retrieval, so those cells are left blank; no value has been estimated to fill them.

Both UAE and Bahrain reached account-ownership levels close to Saudi Arabia's current 78.84% roughly a decade earlier, and both display a pattern consistent with the ceiling-adjusted reading this thesis develops for Saudi Arabia in Table 4.7: rapid growth while distant from a ceiling, followed by a plateau or, in the UAE's case, a slight decline, once the metric approaches saturation. This cross-national pattern supports, without independently proving, the argument that a bounded percentage metric decelerating near saturation is a general feature of GCC account-ownership trajectories, not a phenomenon unique to Saudi Arabia or to its specific strategic FinTech initiatives. This comparison, and its much larger fintech ecosystems in the UAE case, is revisited in the regional-evidence discussion in Section 5.4.

2.7 Research Gap

Three considerations converge to define the contribution of this thesis. The systematic and bibliometric reviews of the global fintech-inclusion literature explicitly call for research demonstrating tangible, mechanism-level impact rather than market-presence correlation (Ha et al., 2025; Del Sarto & Ozili, 2025), and they call for additional country-level, regulatory-context-specific studies, given that the conditional nature of the fintech-inclusion relationship limits the generalizability of findings across regulatory environments. Within Saudi Arabia specifically, meanwhile, the available peer-reviewed literature is limited to a single conceptual study (Noreen, 2024); no quantitative empirical study meeting this thesis's verification standard

was located. No verified, methodologically transparent study has yet traced Saudi Arabia's strategic fintech initiatives through an explicit Theory-of-Change structure, evaluated them against internationally standard access-usage-quality inclusion measures using Findex and FAS secondary data, and grounded that evaluation in documented, case-level evidence spanning multiple fintech verticals rather than a single product or a purely descriptive market overview.

This thesis addresses this combined gap through a secondary-data-based, multi-case evaluative analysis of Saudi Arabia's strategic FinTech adoption initiatives, structured according to the integrated Logic Model, Diffusion of Innovation, and access-usage-quality framework developed in Section 2.4, and explicit throughout regarding which findings rest on strong official or verified evidence and which rest on single-source claims requiring further verification. This includes explicit treatment of a further gap the literature reviewed above does not resolve: whether output-level fintech ecosystem growth, the indicator most commonly reported by industry and government sources (Section 2.5), corresponds proportionally to outcome-level inclusion growth, or whether the two move independently of one another. Section 2.1's access-usage-quality distinction and Section 2.4's Logic Model both anticipate that these two levels need not move together; whether they in fact do so in the Saudi case specifically has not, to this thesis's knowledge, been directly tested using verified secondary data prior to the analysis presented in Chapter 4.

2.8 Conceptual Framework

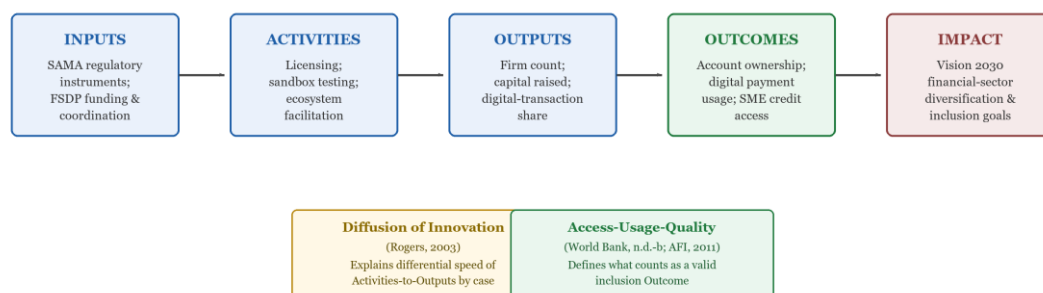
Figure 2.1 presents this integration visually. The conceptual framework applied in this thesis integrates the three theoretical strands developed in Section 2.4 with the Saudi-specific regulatory and case evidence presented in Sections 2.5 and 2.6. SAMA and FSDP regulatory instruments, funding mechanisms, and the National Fintech Strategy constitute the inputs.

Sandbox licensing, the Open Banking rollout, and ecosystem coordination, funded by these inputs, constitute the corresponding activities. These activities produce measurable outputs, specifically firm count, funding raised, and digital transaction share. Diffusion of Innovation theory explains the differential rate at which individual cases convert activities into outputs, since relative advantage, compatibility, and trialability vary across the Regulatory Sandbox/Open Banking, STC Pay/Tamara, Lendo/Forus, and FinTech Saudi/FSDP cases examined in this thesis. These outputs, in turn, produce outcomes, measured through the Findex and FAS indicators of account ownership, payment usage, and SME credit access; the World Bank/AFI access-usage-quality framework determines whether a given outcome is substantive rather than apparent, distinguishing inclusion gains from output growth alone. Impact constitutes the most distal and least directly attributable stage of this chain, corresponding to Vision 2030's broader financial-sector diversification and inclusion objectives.

Figure 2.1. Conceptual Framework

Logic Model chain, with Diffusion of Innovation and access-usage-quality as analytical overlays

Theory of Change / Logic Model (Weiss, 1995; W.K. Kellogg Foundation, 2004)



Tested across four cases:

Regulatory Sandbox/Open Banking • STC Pay/Tamara • Lendo/Forus • FinTech Saudi/FSDP National Strategy

This chain structures the presentation of findings in Chapter 4 and the discussion in Chapter 5.

Chapter 3: Methodology

3.1 Research Philosophy and Approach

This study adopts a pragmatist research philosophy, appropriate to a problem-driven, evaluative research question that draws on both qualitative case evidence and descriptive quantitative secondary indicators without committing exclusively to either paradigm. Weiss (1995) argued that program evaluation should render explicit the causal assumptions connecting an intervention to its intended outcomes; this principle underpins the Logic Model framework applied throughout this analysis (see Section 2.4), and it establishes explicit articulation of these assumed causal linkages as the primary evaluative priority. Rendering an assumed causal chain explicit and empirically establishing that the chain holds are distinct undertakings: this thesis performs the former, tracing the causal logic implicit in Saudi Arabia's own stated strategic design, that regulatory inputs and ecosystem activities are intended to produce specific inclusion outcomes, and evaluates the secondary evidence against that stated logic descriptively. It does not perform the latter: testing whether the assumed chain holds with statistical rigor lies beyond what a secondary-data, non-experimental design can support, a limitation made explicit in Section 3.9 and consistent with Weiss's own framework, not a departure from it. The analytical work is case-based and documentary in nature. Quantitative secondary indicators, drawn from Findex and FAS, serve a descriptive, corroborating function; they do not support statistical inference.

3.2 Research Design

This study employs a multiple case study design (Yin, 2018), in which four purposively selected cases are analyzed both individually, through within-case analysis, and comparatively, through cross-case synthesis. This analysis is triangulated with descriptive trend analysis of secondary quantitative financial inclusion indicators before and after three regulatory

milestones: the 2018 Regulatory Sandbox, the 2020 Open Banking Policy, and the 2022 National Fintech Strategy. This combination suits a research question that is explicitly evaluative: neither exploratory nor confirmatory. Case evidence supplies mechanism-level explanation addressing RQ3, while indicator trend analysis supplies outcome-level description addressing RQ2.

This study relies exclusively on secondary and documentary data; no primary empirical collection methods, including surveys or interviews, were employed. All case and indicator evidence is drawn from publicly available official documents, secondary datasets, and corroborating press or industry coverage, consistent with the scope established in Chapter 1.6.

The three regulatory milestones structuring the before/after comparison were selected because each represents a documented, dated, Tier 1-sourced regulatory action, satisfying the dependability criterion discussed in Section 3.7; a diffuse trend would not meet that bar. Other candidate milestones were considered and set aside. The 2016 Vision 2030 launch itself was not treated as a milestone marker, since it precedes any fintech-specific regulatory action; it instead marks the analysis's general pre-strategy reference point (Table 4.1). The phased 2022 and 2024 rollouts of Account Information Services and Payment Initiation Services under the Open Banking Framework were treated as sub-milestones within the broader 2020 Open Banking Policy period: they operationalize a policy already captured by that milestone, not a distinct strategic decision in their own right.

3.3 Case Selection Strategy and Justification

Case selection was purposive rather than random, guided by four criteria applied jointly to each candidate case. Each case was required to demonstrate strategic significance, representing a nationally significant initiative or firm rather than a marginal market participant, and to contribute to vertical diversity, such that the four cases collectively spanned the fintech

typology identified in the literature, namely regulatory infrastructure, payments, and SME credit (Ha et al., 2025; Del Sarto & Ozili, 2025), thereby ensuring that findings were not artifacts of a single product category. Data availability constituted a further practical constraint: given the secondary-data design, only cases with sufficient publicly available documentation, including regulatory filings, funding disclosures, and press coverage, were considered viable. Finally, each case required temporal alignment with the study period, having been active for a meaningful portion of the 2018-present timeframe, in order to support a before/after reading against the regulatory timeline established in Section 3.2.

Application of these criteria confirmed the four cases identified in the research plan. The SAMA Regulatory Sandbox and Open Banking Initiative represents the regulatory/infrastructure case: the enabling environment itself, not a market participant operating within it. STC Pay and Tamara represent the digital payments/BNPL case, Saudi Arabia's most mature fintech vertical by adoption. Lendo and Forus represent the SME/P2P lending case, directly relevant to the SME-financial-inclusion dimension of RQ2 and RQ3. FinTech Saudi and the FSDP National Fintech Strategy represent the national coordinating-strategy case, which integrates the other three cases at the national-strategy level.

Table 3.2. Case selection criteria matrix

Case	Strategic Significance	Vertical Diversity	Data Availability	Temporal Alignment
SAMA Regulatory Sandbox & Open Banking	National regulatory infrastructure	Regulatory/infrastructure	Official SAMA documents, press releases	Active since 2018
STC Pay / Tamara	First fintech unicorn; largest BNPL facility in the region	Payments/BNPL	Extensive press and investor disclosure	Active since 2020 (STC Pay) / 2019 (Tamara)
Lendo / Forus	SAMA-licensed SME lending platforms	SME credit	Company disclosures, funding announcements	Active since 2019

Case	Strategic Significance	Vertical Diversity	Data Availability	Temporal Alignment
FinTech Saudi / FSDP National Strategy	National coordinating strategy	Cross-cutting (national strategy)	Official annual reporting (Fintech Saudi, FSDP)	Active since 2022 (strategy); ecosystem since 2018

This is a theoretical, purposive sample in the case-study sense (Yin, 2018): the cases were selected for their analytic relevance to the theoretical framework, not for statistical representativeness of Saudi fintech as a whole, consistent with the analytic generalization claim (not a statistical one) stated in Chapter 1.6.

This selection strategy carries an important limitation that deserves explicit acknowledgment: all four cases ultimately selected are market leaders or unicorn-scale firms within their respective verticals, a pattern that follows partly from the data-availability criterion itself, since well-documented firms are disproportionately likely to be market leaders. This risks a form of survivorship bias, in which the cases examined systematically overstate the ease, speed, or scale of successful fintech adoption relative to the vertical as a whole, since less-documented or less-successful competitors are set aside by construction, not by a considered judgment that they are analytically less relevant. Each vertical in fact contained viable alternative candidates, considered and set aside during screening for the same reason in every case: the firms ultimately retained offered more extensively documented Saudi-specific detail at the time of data collection, not greater analytical relevance. Appendix C (Table C.1) records these candidates by vertical, together with the specific reason each was set aside, demonstrating that the screening operated over a genuine pool of alternatives rather than a post-hoc justification for a predetermined set of well-known firms.

This does not eliminate the underlying limitation. The findings presented in Chapter 4 describe mechanisms and outcomes observed among documented market leaders specifically, and should not be read as representative of adoption patterns among smaller, less-documented, or

less successful fintech entrants operating in the same verticals, a limitation acknowledged here and revisited in Section 6.5.

3.4 Data Sources and Collection Procedures

All data employed in this study are secondary and documentary, drawn from four source tiers consistent with an evidence-hierarchy approach to documentary analysis (Bowen, 2009). The primary tier comprises official sources, including SAMA policy and framework documents, press releases, and annual or financial stability reports; Vision 2030 and FSDP program documents and annual reports; and the World Bank Global Findex and IMF Financial Access Survey datasets. A second tier consists of official ecosystem reporting, represented by the jointly produced Fintech Saudi Annual Fintech Report. A third tier, comprising independent corroborating sources, draws on reputable business press, including Arab News, Argaam, Wamda, and FinTech Futures, and industry analysis from KPMG, McKinsey, and Strategy&PwC; this tier serves primarily to corroborate figures from the first two tiers where primary documents could not be directly text-extracted, and to supply case-firm-level detail, such as funding rounds and licensing dates, not addressed by official aggregate reporting. A fourth tier, academic literature, contributes peer-reviewed and Scopus-indexed studies on the fintech-financial-inclusion relationship at the global, regional, and Saudi-specific levels.

Table 3.3. Four-tier evidence hierarchy

Tier	Category	Examples	Primary Use
1	Official primary sources	SAMA policy/framework documents, Vision 2030/FSDP program documents, World Bank Findex, IMF FAS	Core regulatory timeline and quantitative indicators
2	Official ecosystem reporting	Fintech Saudi Annual Fintech Report	Ecosystem-level output metrics (firm count, funding, digital-transaction share)
3	Independent corroborating sources	Arab News, Argaam, Wamda, FinTech	Corroboration where primary documents

Tier	Category	Examples	Primary Use
		Futures; KPMG, McKinsey, Strategy&/PwC	resisted text extraction; case-firm detail
4	Academic literature	Peer-reviewed and Scopus-indexed studies	Theoretical framing and comparison with prior evidence

The collection procedure followed a systematic search-and-verification protocol. Sources were retrieved through targeted searches conducted against each research question and case, and each source was required to satisfy two conditions prior to inclusion: a live, resolvable URL, and independently corroborated publisher and date information. Sources failing to satisfy these conditions were excluded outright; none were retained with a qualifying hedge. One source identified during collection was deliberately excluded following a publication-integrity assessment that raised concerns regarding the hosting journal; this exclusion forms part of the documented audit trail supporting the study's dependability, discussed further in Section 3.7.

3.5 Data Analysis Methods

This study employs two analytical procedures, corresponding to its qualitative and quantitative components. The qualitative procedure involves thematic analysis of case documents, including official policy texts, annual reports, and press coverage, conducted within each case (Braun & Clarke, 2006) to identify recurring mechanisms, enablers, and barriers connecting the case's fintech initiative to financial inclusion outcomes. This analysis is guided by the Diffusion of Innovation attributes developed in Chapter 2.4, namely relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003). Within-case findings are subsequently compared across the four cases through cross-case synthesis (Yin, 2018), distinguishing patterns that hold across verticals from patterns specific to individual cases.

This thematic analysis applied a hybrid deductive-inductive coding scheme. Three deductive top-level categories were fixed in advance from the theoretical framework developed in

Chapter 2.4: Logic Model stage (input, activity, output, outcome, impact), Diffusion of Innovation attribute (relative advantage, compatibility, complexity, trialability, observability), and access-usage-quality dimension. Within each case document, passages were additionally coded inductively for enablers, factors reported as facilitating adoption or scale, and barriers, factors reported as constraining adoption or scale, allowing patterns not anticipated by the a priori framework, such as the survivorship-bias risk documented in Section 3.3 and the quality-dimension evidentiary gap documented in Section 4.4, to surface from the material itself instead of being foreclosed by the coding scheme. Table 3.4 summarizes this coding structure.

Table 3.4. Coding scheme applied to case documents

Category Type	Codes Applied	Source of Code
Logic Model stage	Input, Activity, Output, Outcome, Impact	Deductive (Weiss, 1995; W.K. Kellogg Foundation, 2004)
Diffusion of Innovation attribute	Relative advantage, Compatibility, Complexity, Trialability, Observability	Deductive (Rogers, 2003)
Access-usage-quality dimension	Access, Usage, Quality	Deductive (World Bank, n.d.-b; Alliance for Financial Inclusion, 2011)
Enablers	e.g., regulatory coordination, sovereign capital participation, sandbox testing	Inductive
Barriers	e.g., complexity/low trialability, SME credit gap, evidentiary gaps	Inductive

A single coder, the thesis author, applied this scheme across all four cases; no second coder was available to establish inter-coder reliability statistics, a limitation of a single-author thesis design disclosed here openly. To partially mitigate this constraint, each coded claim was cross-checked against at least one Tier 1 or Tier 2 source (Section 3.4) before being incorporated into the findings presented in Chapter 4, so that the coding scheme organized the analysis without substituting for source verification.

The quantitative procedure is explicitly descriptive, not inferential. Findex and FAS indicators, including account ownership, digital payment usage, and SME credit access proxies, are compiled into a before/after comparison structured around the three regulatory milestones identified in Section 3.2. Given the secondary-data, non-experimental design employed here, a trend that co-occurs with a regulatory milestone is reported as associative evidence, consistent or inconsistent with a stated strategic objective. It is not reported as evidence of a statistically established causal effect.

3.6 Evaluation Framework and Criteria

The Logic Model developed in Chapter 2.4/2.8 is operationalized into the following concrete indicators for Chapter 4:

Table 3.1. Operational indicators derived from the Logic Model framework

Logic Model Stage	Operational Indicator	Primary Source
Inputs	Regulatory instruments issued (Sandbox Framework, Open Banking Policy, National Fintech Strategy)	SAMA, Ministry of Finance
Activities	Licensing actions, framework rollout phases (AIS/PIS)	SAMA press releases
Outputs	Fintech firm count, disclosed funding (SAR/USD), digital transaction share, connected-account count	Fintech Saudi Annual Fintech Report; FSDP Annual Report
Outcomes	Account ownership rate, digital payment usage rate, SME credit access proxy	World Bank Global Findex; IMF FAS
Impact	Qualitative discussion against Vision 2030/FSDP stated targets	Cross-referenced against 2.5 and Chapter 5

The Impact stage is assessed qualitatively, not measured directly, since attributing broad national development outcomes to specific fintech initiatives using secondary data alone would exceed the evidentiary support this design can provide.

3.7 Trustworthiness and Rigor

As a qualitative-dominant secondary-data design, this study's rigor is assessed against the four naturalistic-inquiry criteria established by Lincoln and Guba (1985), the standard appropriate to this design, in place of positivist validity and reliability criteria. Credibility is established through source triangulation: where a Tier 1 official document could not be directly text-verified, including several SAMA and FSDP PDFs, the corresponding finding was corroborated against at least one independent Tier 3 source prior to inclusion, and unconfirmable claims were excluded (see Section 3.4). Transferability is supported by the thick, contextualized description of the Saudi regulatory environment provided in Section 2.5, enabling readers to assess the applicability of these findings to other GCC or MENA contexts. Dependability rests on a documented, reproducible search and verification protocol: searches that returned no results, such as the CITC/CST report search, are recorded explicitly, not silently omitted. Confirmability is achieved through exhaustive in-text citation of every substantive claim and explicit identification of claims resting on lower-confidence sources, such as Mashoene et al. (2025); no source is treated as automatically authoritative.

These four criteria were applied consistently as this thesis's evidentiary base was extended during revision, not only at initial data collection. Newly incorporated sources, the disaggregated Findex data in Table 4.6, the GCC comparison in Table 2.1, and the regulatory-design evidence on cybersecurity, financial literacy, and BNPL consumer protection in Sections 2.6 and 4.4, were each subjected to the same live-URL and corroborated-publisher-and-date test described in Section 3.4 before inclusion. Where a source could not be fully verified, the International Monetary Fund's 2018 Selected Issues report on Saudi Arabia's Wage Protection System being one instance (Section 4.2), this limitation is disclosed in-text at the point of citation, consistent with the confirmability criterion above, and never silently smoothed over. Appendix B consolidates the verification status of the most load-bearing sources added during this process into a single reference table, extending the dependability

audit trail described above beyond the narrative disclosures made at each individual point of citation.

3.8 Ethical Considerations

No primary human-subjects data were collected in this study, and standard human-subjects or Institutional Review Board review therefore does not apply to this design. The ethical obligations relevant to this study instead concern secondary-source use. Attribution integrity requires that all data and quotations be cited to their original source; none are presented as original to this author. Copyright and fair-use considerations are addressed by summarizing and citing official reports and press coverage instead of reproducing substantial copyrighted text. Fair representation requires that conflicting findings, or findings resting on lower-confidence sources, be reported as such, never selectively omitted (see Sections 3.4 and 3.7). A further ethical consideration specific to this thesis's Case 1 (Section 4.3) concerns the data-protection framework Open Banking itself operates under, distinct from this thesis's own secondary-data ethics discussed above. Saudi Arabia's Personal Data Protection Law, enacted by Royal Decree No. M/19 in September 2021, amended in March 2023, and in full force since 14 September 2023 following a one-year compliance grace period, requires, among other provisions, granular and revocable customer consent before any Open Banking-enabled third-party provider may access account data, restricts that data's use to the specific purpose consented to, and restricts its transfer outside Saudi Arabia without specific authorization (PwC Middle East, n.d.). This thesis does not evaluate PDPL compliance directly, since doing so would require primary audit-level access outside this study's secondary-data design; it is noted here because consumer trust in data-sharing arrangements likely bears on the compatibility and complexity constraints on Open Banking adoption discussed in Section 4.3, an additional enabler/barrier candidate this thesis's case-level evidence could not directly test.

3.9 Limitations of the Methodology

This design is subject to four structural limitations.

- Reliance on secondary and case-study data limits the findings presented to association and documented mechanism: a trend that co-occurs with a regulatory milestone is suggestive evidence of effect, short of statistically established causation.
- Purposive case selection limits the statistical generalizability of these findings to Saudi fintech as a whole; the findings offered here are generalizable analytically, not statistically. This limitation is compounded by a survivorship-bias risk discussed in Section 3.3: the data-availability criterion applied during case selection disproportionately favored market-leading and unicorn-scale firms over smaller or less-documented competitors that were also active in each vertical, so the mechanisms and outcomes described in Chapter 4 should be read as characteristic of documented market leaders specifically, not of each vertical as a whole.
- Several primary official documents, including SAMA and FSDP PDFs, could not be directly text-extracted during data collection and were instead corroborated through independent secondary coverage, a workable but comparatively weaker verification approach, disclosed transparently in Section 3.4.
- Saudi-specific peer-reviewed academic literature on this precise topic remains limited, such that the regional MENA/GCC evidence discussed in Chapter 2 necessarily carries greater analytical weight than country-specific evidence in certain respects, a constraint of the existing literature base, not of the search methodology employed in this study.

Chapter 4: Findings and Case Analysis

4.1 Overview of Saudi FinTech Strategic Growth

Mapping the empirical data against the operational indicators established in Section 3.6 reveals unambiguous, well-documented growth at the output layer of Saudi Arabia's strategic FinTech push. By end-2024, the ecosystem comprised 261 licensed or operating fintech firms, representing 21% year-on-year growth that exceeded the program's own 230-firm 2025 target. Direct employment reached 11,046, an increase of 64% year-on-year. Disclosed 2024 funding alone totaled SAR 905 million, against a cumulative total of SAR 7.9 billion, 204% above the 2025 target (Fintech Saudi et al., 2025). Cumulative fintech investment exceeded US\$1.14 billion between September 2020 and December 2023, with 2023 alone accounting for US\$791 million, a 231% year-on-year increase (KPMG, 2024). Digital transactions exceeded 70% of the total in 2023 (KPMG, 2024) and reached 79% by end-2024 (Fintech Saudi et al., 2025), surpassing the original Vision 2030 non-cash-transaction target approximately two years ahead of schedule. Open-banking connected accounts nearly tripled within a single year, increasing from 115,000 in 2023 to 334,000 in 2024 (Fintech Saudi et al., 2025).

Table 4.2. Saudi FinTech ecosystem output indicators, end-2024

Indicator	End-2024 Value	Year-on-Year Change	Target Comparison
Fintech firms (licensed/operating)	261	+21%	Exceeds 230-firm 2025 target
Direct employment	11,046	+64%	—
Disclosed annual funding	SAR 905 million (cumulative SAR 7.9 billion)	—	204% above 2025 cumulative target
Digital transaction share	79%	Crossed 70% in 2023 (KPMG, 2024)	Non-cash target met ~2 years early
Open-banking connected accounts	334,000	Up from 115,000 in 2023	Nearly tripled in one year

Note. All figures from Fintech Saudi et al. (2025) unless otherwise indicated. Where a source does not report a year-on-year percentage for an indicator, the cell is simply left blank; no figure has been estimated to fill it.

Figure 4.2 presents this end-2024 output snapshot as a KPI dashboard, visualizing the five indicators in Table 4.2 alongside their target-comparison context.

Figure 4.2. Saudi FinTech Ecosystem Output Snapshot, End-2024

Output-level indicators from the Logic Model framework (Section 3.6); see Table 4.2



All five indicators grew substantially in 2024 — the clearest evidence of output-level success (Section 4.1)

Whether this output growth translated into inclusion-outcome growth is addressed separately in Section 4.2 (Table 4.1) and Section 4.7

Source: Fintech Saudi, Saudi Central Bank, Capital Market Authority, & Insurance Authority (2025); KPMG (2024). See Table 4.2.

This constitutes a well-evidenced output-level finding. Whether this growth is reflected in outcome-level financial inclusion indicators, and over what timeline relative to the regulatory milestones, is addressed in the following section.

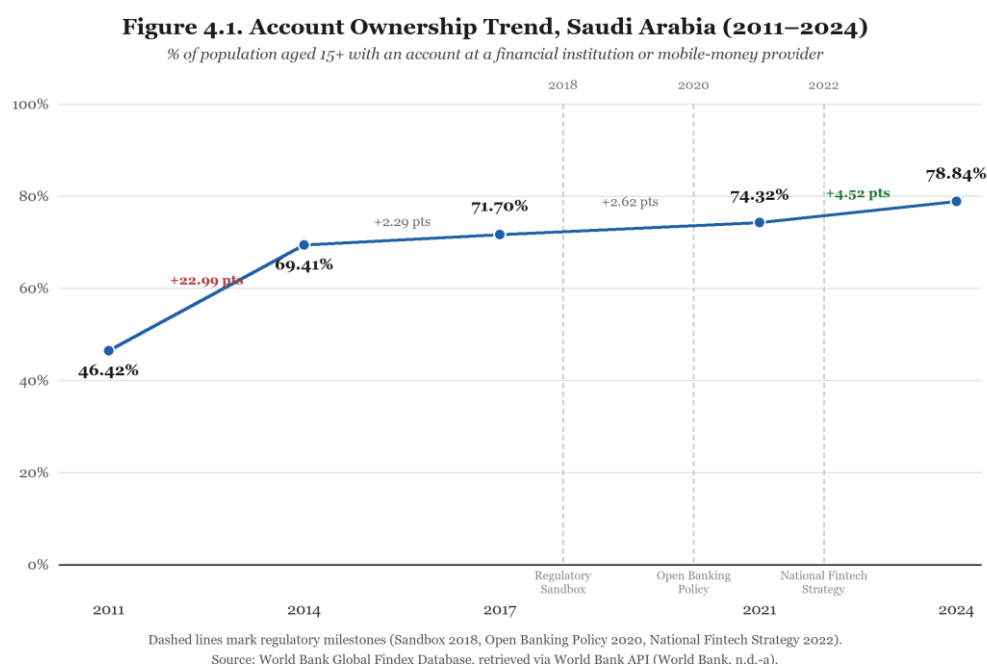
4.2 Financial Inclusion Trend Analysis

Table 4.1 presents verified Global Findex account-ownership data for Saudi Arabia across all available survey rounds, obtained directly from the World Bank API for this analysis (World Bank, n.d.-a).

Table 4.1. Account ownership at a financial institution or mobile-money provider, Saudi Arabia (% of population 15+)

Year	Value	Interval Change	Regulatory Context
2011	46.42%	—	Pre-Vision 2030
2014	69.41%	+22.99 pts	Pre-Vision 2030
2017	71.70%	+2.29 pts	Vision 2030 announced (2016); pre-Sandbox
2021	74.32%	+2.62 pts	Post-Sandbox (2018), post-Open Banking Policy (2020)
2024	78.84%	+4.52 pts	Post-National Fintech Strategy (2022), post-AIS rollout

Figure 4.1 plots this trend as a line chart with the three regulatory milestones marked, making the pre-strategy/strategy-period growth asymmetry visible at a glance.



These data qualify the "success story" framing common in industry reporting. The single largest increase in account ownership, nearly 23 percentage points, occurred between 2011 and 2014, entirely prior to the existence of Vision 2030 or any strategic FinTech initiative. Growth subsequently decelerated substantially through 2017 and 2021, at a rate of approximately +2.3 to +2.6 points per interval, before re-accelerating to +4.5 points across 2021–2024, the period most fully covered by the Sandbox, the Open Banking Policy, and the National Fintech Strategy. Read against the Logic Model framework in Chapter 3.6, this pattern fits a re-acceleration of account-ownership growth following a plateau. The earlier and larger wave of financial inclusion gains more likely reflects structural reforms outside the scope of this thesis. Saudi Arabia's Wage Protection Program, introduced in 2013 and phased in as a mandatory requirement for private-sector establishments of all sizes shortly thereafter, required employers to pay wages through the banking system, typically via a bank account or salary-payment card issued to each worker (Ministry of Human Resources and Social Development, n.d.). This implementation window aligns closely with the 2011–2014 Findex interval, and an IMF assessment of Saudi Arabia's financial sector identifies this same wage-protection requirement

as a contributor to financial access gains over this period (International Monetary Fund, 2018). This thesis was not able to directly text-extract the relevant passage from the IMF report itself and relies on independent secondary corroboration for this specific attribution, consistent with the verification approach documented in Sections 3.4 and 3.7; the explanation is accordingly presented here as a well-supported hypothesis rather than a definitively established causal account, consistent with the non-causal design specified in Chapter 3.9. The data are consistent with a meaningful strategic-FinTech contribution to the 2021–2024 re-acceleration, though this contribution cannot be established independently of other concurrent factors active during the same period, including COVID-19-driven digitalization and broader Vision 2030 reforms.

A further concern deserves to be addressed directly: any bounded percentage metric mechanically decelerates as it approaches a ceiling, so a raw-point comparison between a low-baseline period (2011–2014) and a near-ceiling period (2021–2024) risks penalizing the later period for an arithmetic property of the metric itself rather than for a genuine slowdown in progress, particularly given that Saudi Arabia's 78.84% (2024) figure sits close to the ~79% global average cited in Section 2.2 (World Bank, 2025). Table 4.7 tests this concern directly, expressing each interval's point change as a share of the distance remaining to two reference ceilings: the 79% global average, and the metric's true mathematical ceiling of 100%.

Table 4.7. Ceiling-adjusted reading of account-ownership growth, Saudi Arabia

Interval	Point Change	Gap to 79% Global-Average Reference at Interval Start	% of That Gap Closed	Gap to 100% Ceiling at Interval Start	% of That Gap Closed
2011–2014	+22.99 pts	32.58 pts	70.6%	53.58 pts	42.9%
2014–2017	+2.29 pts	9.59 pts	23.9%	30.59 pts	7.5%
2017–2021	+2.62 pts	7.30 pts	35.9%	28.30 pts	9.3%
2021–2024	+4.52 pts	4.68 pts	96.6%	25.68 pts	17.6%

Note. The 79% global-average reference is a descriptive external benchmark (World Bank, 2025; Section 2.2), not Saudi Arabia's own ceiling; the 100% figure is the metric's true theoretical bound. Percentages calculated from the unrounded Table 4.1 values.

Two results follow, and they qualify the "modest outcome" framing in different directions. Measured against the global-average benchmark, the 2021–2024 interval closed 96.6% of Saudi Arabia's remaining distance to global parity, the highest share of any interval examined and far exceeding the 70.6% closed in 2011–2014; on this reading, the raw 4.52-point gain substantially understates how much of the available room the strategic period actually closed, precisely because so little room remained. Measured against the true 100% ceiling, the picture is more mixed: the 2011–2014 interval still closed the largest share of remaining gap (42.9%), while the 2021–2024 interval's 17.6% nonetheless represents a genuine improvement over the two intervening plateau intervals (7.5%, 9.3%) rather than a mechanical artifact of ceiling proximity, since roughly 25 to 30 points of headroom remained available throughout 2014–2024 under this stricter benchmark. Taken together, this ceiling-adjusted reading does not overturn the central finding that 2011–2014 produced the single largest inclusion gain in raw-point terms; it does establish that the 2021–2024 re-acceleration was a genuine recovery from the preceding plateau rather than merely the mechanical extension of a bounded metric running out of room, and that the raw-point comparison alone, absent this adjustment, understates the strategic period's performance relative to the room actually available to it. The central finding developed in Section 4.7 and Chapter 5, that output growth has substantially outpaced outcome growth in the strategic period, is accordingly retained, with this qualification stated outright instead of left for the reader to infer.

The aggregate trend in Table 4.1 also obscures substantial disaggregated variation that speaks directly to who has, and has not, been included. World Bank DataBank/Global Findex data disaggregated by gender and by income group, drawn from the same source as Table 4.1

(World Bank, n.d.-a), show that the 2011–2014 jump was concentrated overwhelmingly among two specific subgroups: women and the poorest 40% of the population.

Table 4.6. Account ownership disaggregated by gender and income group, Saudi Arabia (% of relevant population 15+)

Year	Female	Male	Gender Gap (pts)	Poorest 40%	Richest 60%	Income Gap (pts)
2011	15.23%	72.72%	57.49	32.77%	54.90%	22.13
2014	61.15%	75.33%	14.18	64.82%	72.87%	8.05
2017	58.17%	80.54%	22.37	64.56%	76.44%	11.88
2021	63.49%	81.67%	18.18	66.61%	79.43%	12.82
2024	73.46%	81.81%	8.35	74.62%	81.66%	7.04

Note. World Bank DataBank/Global Findex, indicators *FX.OWN.TOTL.FE.ZS*, *FX.OWN.TOTL.MA.ZS*, *FX.OWN.TOTL.40.ZS*, and *FX.OWN.TOTL.60.ZS* (World Bank, n.d.-a). Rural/urban disaggregation was not available for Saudi Arabia in the World Bank DataBank at the time of this analysis and is accordingly not reported here.

Two patterns follow. First, the aggregate 2011–2014 jump documented in Table 4.1 is disproportionately a story about women's account ownership specifically: female ownership rose by 45.92 points across this interval (15.23% to 61.15%), against a 2.61-point rise for men over the same period. This disparity is consistent with, though it does not on its own prove, the wage-protection explanation discussed above: a mandatory measure requiring formal bank accounts for wage disbursement would be expected to move an excluded population toward account ownership considerably more than an already largely-included one. The gender gap narrowed sharply between 2011 and 2014, widened again through 2017, and narrowed once more through 2024, ending the observation period at its lowest recorded level of 8.35 points. Second, the strategic-period (2021–2024) gains were not concentrated among the already-included on the income dimension: the poorest 40% gained 8.01 points (66.61% to 74.62%) against 2.23 points for the richest 60% (79.43% to 81.66%) over the same interval, so the income gap in account ownership narrowed during the period this thesis's four cases examine; it did not widen. This finding qualifies the usage-concentration reading advanced in Section

5.1: while the output growth and case evidence emphasized in this thesis concentrate on products serving an already-banked population (Sections 4.4, 4.5), the account-level data do not show the strategic period leaving the poorest population further behind specifically on the access dimension, even though the SME-credit gap documented below remains a distinct and substantially unaddressed concern.

A directly comparable Findex individual-level measure of "made or received digital payments" could not be extracted from World Bank sources for this analysis (see the limitations discussed in Chapter 3.9). As a supply-side proxy, the ecosystem-reported digital transaction share increased from below 70% prior to 2023 to 79% by end-2024 (Fintech Saudi et al., 2025; KPMG, 2024). This figure measures the proportion of transactions conducted digitally across the economy, a usage-intensity or volume measure, rather than the proportion of individuals who have made a digital payment, a Findex-style prevalence measure; these two measures should not be treated as interchangeable.

SME credit access further complicates this picture. The World Bank's 2025/2026 Saudi Arabia Enterprise Survey provides the most direct evidence available on this dimension of RQ2. Over half of Saudi firms identified access to finance as the single biggest obstacle to conducting business, more than double the 22% MENA average and the highest reading among the survey's comparator groups, notwithstanding that Saudi firms use bank credit more readily than regional peers overall, with banks financing 41% of capital expenditure against 15% regionally (EnterpriseAM, 2026, reporting World Bank Enterprise Surveys, 2026). This gap is concentrated among small firms specifically: 60% of small firms identified access to finance as their primary obstacle, and only 14% held a bank loan, compared with 23% of large firms (EnterpriseAM, 2026).

Table 4.3. SME credit access, small vs. large Saudi firms

Indicator	Small Firms	Large Firms
Cite access to finance as top obstacle	60%	—
Hold a bank loan	14%	23%

Note. EnterpriseAM (2026), reporting World Bank Enterprise Surveys (2026). The survey's comparator-group figure for large firms citing finance as their top obstacle was not reported in the source used here.

This finding bears directly on Case 3 (Section 4.5), indicating unmet SME credit demand at a scale that P2P and invoice-financing platforms such as Lendo and Forus are positioned to address, and providing an evidentiary basis for evaluating the extent to which this gap has been reduced.

4.3 Case 1: SAMA Regulatory Sandbox & Open Banking

The Sandbox and the phased Open Banking Framework, with Account Information Services operational from November 2022 and Payment Initiation Services from September 2024 (SAMA, 2018, 2022), belong to the inputs and activities layer of the Logic Model; they are not inclusion outcomes in themselves. Diffusion of Innovation attributes account for the pattern that follows (Rogers, 2003). Relative advantage is evident: consolidated account visibility and accelerated merchant settlement address the specific frictions identified by Strategy&/PwC (2021) prior to the reform. However, complexity remains comparatively high and trialability comparatively low for the end consumer, since Open Banking's benefits are realized indirectly, through third-party applications built upon it, and not through a single visible product that can be tested directly. This distinction likely accounts for why connected accounts, despite growing rapidly in relative terms, from 115,000 to 334,000 between 2023 and 2024 (Fintech Saudi et al., 2025), continue to represent a small fraction of Saudi Arabia's banked adult population relative to consumer-facing products such as STC Pay or Tamara. Griffiths et al. (2025) identify a comparable pattern in a different national context: across the seven fintech service domains examined in their study of Vietnam's fintech ecosystem, diffusion is markedly uneven,

with infrastructure-adjacent and non-payment domains achieving comparatively low market penetration relative to payments.

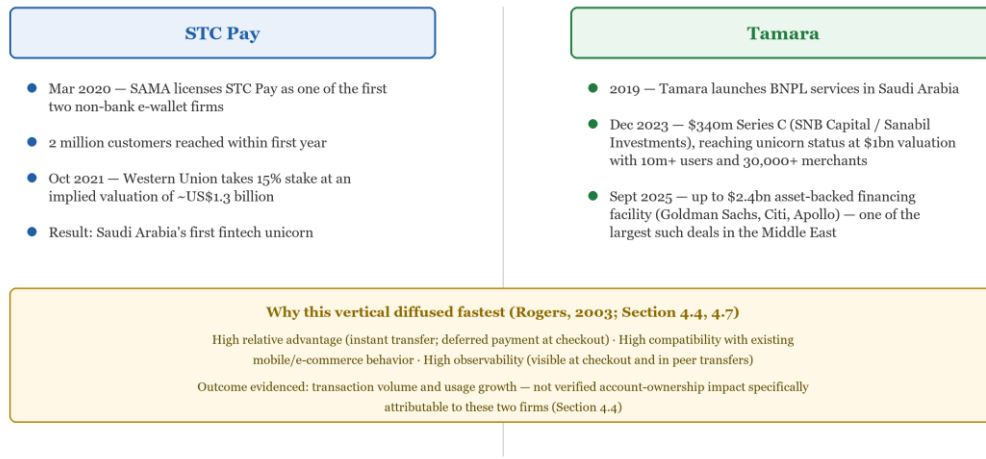
4.4 Case 2: STC Pay and Tamara (Digital Payments / BNPL)

SAMA licensed STC Pay in March 2020 as one of the first two non-bank e-wallet firms, and it reached 2 million customers within its first year of operation (Argaam, 2020). By October 2021, it had secured a 15% investment stake from Western Union at an implied valuation of approximately US\$1.3 billion, establishing it as Saudi Arabia's first fintech unicorn (Western Union, 2021). Tamara followed a comparable trajectory, achieving unicorn status by December 2023 following a \$340 million Series C round co-led by SNB Capital and PIF-owned Sanabil Investments, at a \$1 billion valuation with over 10 million users and over 30,000 merchants (Arab News, 2023), and by September 2025 had secured an asset-backed financing facility of up to \$2.4 billion from Goldman Sachs, Citi, and Apollo, one of the largest such transactions in the Middle East (FinTech Futures, 2025b). Both products score highly on the Diffusion of Innovation attributes most closely associated with rapid adoption: relative advantage, including instant peer-to-peer transfer and deferred payment at point of sale; compatibility with existing mobile and e-commerce usage patterns; and observability, being visible both at checkout and in peer transfers. This vertical accordingly demonstrates the fastest, most consumer-visible adoption among the four cases examined, and likely the strongest direct contribution to the digital-transaction-share growth documented in Section 4.2. It also represents the clearest case-level association between a specific strategic initiative, SAMA's 2018–2020 licensing framework for non-bank e-money issuers, and a substantial, well-evidenced adoption outcome, although the outcome evidenced here reflects transaction volume and usage growth rather than verified account-ownership or unbanked-reduction impact specifically attributable to these two firms, and the secondary-data design applied throughout this thesis cannot establish this association as causal.

The access-usage-quality framework introduced in Section 2.1 defines a third dimension, quality, that the evidence assembled elsewhere in this chapter does not measure directly through outcome data. No public aggregate statistics on BNPL complaint volumes, dispute-resolution rates, or arrears/over-indebtedness rates specific to Tamara, STC Pay, or the Saudi BNPL market as a whole could be located during this thesis's data collection; this absence is acknowledged here as an evidentiary gap; it is not elided or treated as implicitly resolved by the usage-volume growth documented above. What can be documented is the regulatory design intended to safeguard quality at the input stage of the Logic Model. SAMA's Rules for Regulating Buy-Now-Pay-Later (BNPL) Companies, published 17 December 2023, require BNPL providers to assess each consumer's creditworthiness and repayment capacity through a documented methodology prior to extending credit (Article 19), prohibit BNPL providers from charging the consumer any fee beyond a narrowly defined delay penalty (Article 20), cap outstanding BNPL exposure at SAR 10,000 per consumer and limit financing to a maximum of 12 installments per transaction (Article 22), and mandate documented complaint-handling procedures within a SAMA-specified response period (Article 17) (Saudi Central Bank [SAMA], 2023b). These provisions constitute quantified regulatory safeguards against exactly the over-indebtedness and complaint-handling concerns the access-usage-quality framework is designed to surface. They describe regulatory design and intent, however, not a measured outcome: this thesis cannot report what share of Saudi BNPL borrowers actually approach the SAR 10,000 exposure cap, how frequently complaints are filed or resolved in practice, or whether arrears rates have changed over the period examined. This design-versus-outcome distinction is carried through explicitly in the discussion in Section 5.1, which keeps the quality dimension from collapsing into a synonym for usage volume.

Figure 4.3 presents this case's key milestones and Diffusion of Innovation attributes as a side-by-side infographic.

Figure 4.3. Case 2 — STC Pay and Tamara (Digital Payments / BNPL)
Consumer payments/BNPL vertical: the fastest-diffusing case among the four examined (Section 4.4)



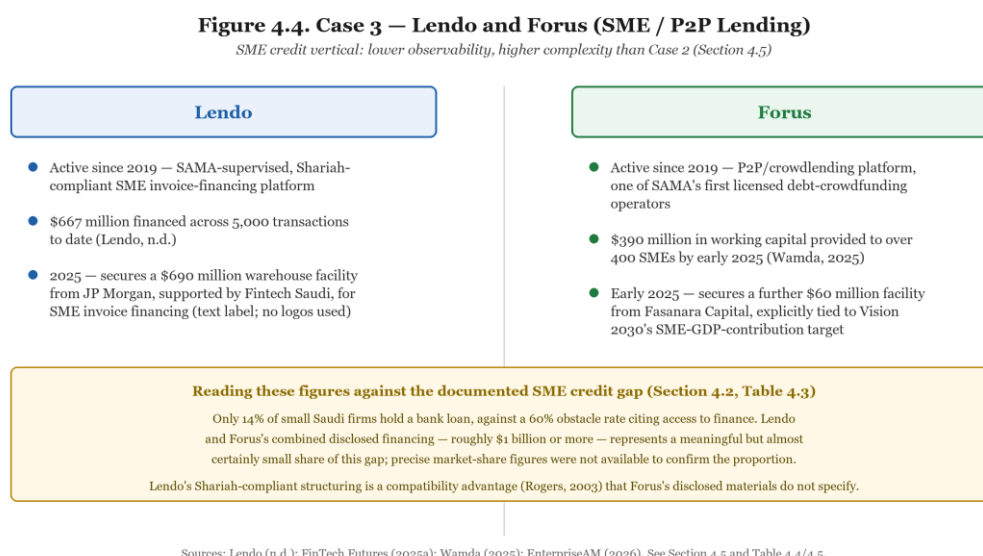
Sources: Argaam (2020); Western Union (2021); Arab News (2023); FinTech Futures (2025b). See Section 4.4 and Table 4.4/4.5.

Placed within the wider Saudi BNPL competitive landscape, Tamara is not the only unicorn-scale player in this vertical. Tabby, a BNPL competitor also active in Saudi Arabia, reached a \$3.3 billion valuation in February 2025 following a \$160 million Series E round, becoming, by some measures, the most valuable fintech company in the Middle East and North Africa, with 15 million customers and over 40,000 merchant partners across Saudi Arabia, the UAE, and Kuwait (Arab News, 2025a). A third entrant, Spotii, received a SAMA BNPL permit in 2023 alongside Madfu (Saudi Central Bank [SAMA], 2023a), though its disclosed scale is markedly smaller than either Tamara's or Tabby's. This competitive density is itself informative for the Diffusion of Innovation reading advanced above: a vertical capable of sustaining multiple unicorn-scale competitors simultaneously is more consistent with a high-relative-advantage, low-complexity product category than with success attributable to a single first-mover firm. It also reinforces the survivorship-bias caveat discussed in Section 3.3: the case examined here, Tamara (alongside STC Pay), is one of at least three viable, well-documented BNPL competitors active in the Saudi market, and the vertical-level diffusion pattern identified in this thesis should accordingly be read as characteristic of BNPL as a product category, not as an idiosyncratic feature of Tamara specifically.

4.5 Case 3: Lendo and Forus (SME / P2P Lending)

Lendo, which operates under SAMA supervision and Shariah-compliant terms, has financed over \$667 million across 5,000 transactions since 2019 (Lendo, n.d.), and in 2025 secured a \$690 million warehouse facility from JP Morgan, supported by Fintech Saudi, for SME invoice financing (FinTech Futures, 2025a). Shariah-compliant structuring functions here as a specific instance of Rogers' (2003) compatibility attribute: it aligns the product with SME borrowers' existing religious and normative expectations regarding permissible finance, a compatibility dimension distinct from, but analytically parallel to, the compatibility with existing mobile and e-commerce usage patterns identified for STC Pay and Tamara in Section 4.4 (Table 4.5). This represents a genuine compatibility advantage for Lendo specifically; it does not extend automatically to Forus, whose disclosed materials reviewed for this thesis do not specify an equivalent Shariah-compliance structuring. Forus, a P2P and crowdlending platform and one of SAMA's first licensed debt-crowdfunding operators, provided \$390 million in working capital to over 400 SMEs by early 2025, at which point it secured a further \$60 million facility from Fasanara Capital explicitly tied to Vision 2030's SME-GDP-contribution target (Wamda, 2025). Considered against the Enterprise Survey finding discussed in Section 4.2, that only 14% of small Saudi firms hold a bank loan, these two platforms' combined disclosed financing, approximately \$1 billion or more across both, represents a meaningful but almost certainly small proportion of the documented unmet SME credit gap; precise market-share figures were not available to confirm this proportion quantitatively, a limitation acknowledged explicitly here. This vertical demonstrates lower observability than Case 2, since B2B financial products are inherently less visible than consumer payment applications, and likely greater complexity for a first-time SME borrower, consistent with the finding of Griffiths et al. (2025) that credit-oriented fintech verticals diffuse more slowly than payments under equivalent regulatory conditions. This case is consistent with that pattern.

Figure 4.4 presents this case's key milestones and financing context as a side-by-side infographic, using plain text labels for financing partners rather than reproducing third-party logos.



The SME/P2P lending vertical is similarly more densely populated than a two-case treatment might suggest. Raqamyah, a SAMA-licensed, Shariah-compliant P2P platform active since 2017 and part of SAMA's regulatory sandbox since 2019, and Manafa Capital, a CMA/SAMA-licensed debt-crowdfunding platform active since 2018, operate on a broadly comparable licensing basis to Lendo and Forus (Arab News, n.d.-a; LenderKit, n.d.). SAMA's own permitted-fintech registry additionally lists Maalem Financing Company, Nayifat Finance Company, Tameed Financing, Funding Souq, and Sahlah Company for Electronic Marketing as licensed debt-crowdfunding operators alongside these four (Saudi Central Bank [SAMA], n.d.-b). This density suggests the vertical's comparatively slower, lower-observability diffusion pattern identified above reflects a structural feature of B2B SME lending as a product category, consistent with Rogers' (2003) complexity and observability constructs; it is not a limitation specific to Lendo or Forus as individual firms. It also means the unmet SME credit gap documented in Section 4.2 is being addressed by a wider field of licensed platforms than the two-case treatment in this thesis captures directly, a scope limitation acknowledged in Sections 3.3 and 3.9.

4.6 Case 4: FinTech Saudi National Strategy / FSDP

The Council of Ministers approved the National Fintech Strategy as a formal FSDP pillar in May 2022 (Ministry of Finance, 2022). In Logic Model terms, this strategy constitutes the coordinating activity that integrates Cases 1 through 3, functioning as the mechanism through which SAMA, the Capital Market Authority, and the FSDP program office jointly establish the firm-count and GDP-contribution targets against which the ecosystem's output growth, discussed in Section 4.1, is measured and reported (Fintech Saudi et al., 2025). Unlike the first three cases, this strategy is not a product or infrastructure component adopted directly by consumers or SMEs; its effectiveness is observable only indirectly, through the aggregate performance of the cases it coordinates, which renders it the most analytically difficult of the four cases to evaluate independently.

The FSDP's fintech pillar sits within a substantially broader program mandate spanning banking, insurance, and capital-markets development, jointly monitored by SAMA, the Capital Market Authority, and the Ministry of Finance, with the Insurance Authority contributing to the fintech count specifically by licensing 14 of the 261 firms reported in Table 4.2 (Arab News, 2025b). The program's own longer-horizon target extends the 230-firm 2025 benchmark discussed in Section 4.1 to 525 firms by 2030, more than double the current count, indicating that the ecosystem's leadership regards 2024's 261-firm figure as roughly the midpoint of a still-unfolding growth trajectory rather than as an endpoint (Arab News, 2025b). Beyond fintech specifically, the FSDP's capital-markets sub-pillar reports substantial parallel growth: Saudi Arabia's asset management industry surpassed SAR 1 trillion (approximately US\$266.7 billion) by end-2024, a 169% increase from SAR 391 billion in 2017, while the number of registered investment funds grew from 577 to 1,549 over the same period, a 168% increase (Arab News, 2025b). These figures are not fintech-specific and lie outside this thesis's four-case scope; they are noted here only to illustrate that the National Fintech Strategy operates as

one pillar within a considerably larger financial-sector reform program, reinforcing the difficulty, discussed in Section 4.7 and Section 5.6, of isolating the fintech pillar's own marginal contribution to Vision 2030's broader financial-sector diversification objective from the contributions of the other, concurrently reformed sub-sectors.

4.7 Cross-Case Synthesis

Table 4.4. Summary of case characteristics

Case	Launch / Licensing	Key Financial Milestone	Scale Reached (most recent reported)
1. Sandbox / Open Banking	Sandbox 2018; AIS live Nov 2022; PIS live Sept 2024	Regulatory infrastructure, not a financed firm	334,000 connected accounts (2024)
2. STC Pay / Tamara	STC Pay licensed Mar 2020; Tamara unicorn status Dec 2023	STC Pay: ~US\$1.3bn valuation (2021); Tamara: up to \$2.4bn financing facility (2025)	STC Pay: 2 million customers (year 1); Tamara: >10 million users, >30,000 merchants
3. Lendo / Forus	Both active since 2019	Lendo: \$690m JP Morgan facility (2025); Forus: \$60m Fasanara facility (2025)	Lendo: \$667m financed across 5,000 transactions; Forus: \$390m to 400+ SMEs
4. FinTech Saudi / FSDP	National Fintech Strategy approved May 2022	Coordinates cumulative ecosystem funding of SAR 7.9bn	261 firms, 11,046 direct jobs (2024)

Evaluation of the four cases against the Logic Model and Diffusion of Innovation frameworks developed in Chapter 2.4 identifies a central analytical pattern: output growth across the ecosystem is uniform and substantial, while outcome growth is uneven and varies by vertical. Firm count, funding, and digital-transaction share each grew substantially across the ecosystem between 2022 and 2024 (Section 4.1); however, the account-ownership outcome data presented in Section 4.2 indicate that this growth coincided with only a modest re-acceleration of +4.5 points between 2021 and 2024, following a multi-year plateau and smaller in magnitude than the pre-Vision-2030 gains recorded between 2011 and 2014. This pattern is more consistent with a "usage/quality" account than with a pure "access" account: the majority of Saudi adults already held an account prior to the strategic FinTech initiative, such that the initiative's likely

marginal contribution is concentrated in how existing account-holders transact, reflected in Case 2's payments and BNPL growth, and in reducing the SME credit gap addressed by Case 3, rather than in the headline banked/unbanked statistic emphasized in promotional reporting.

Diffusion of Innovation attributes account for the observed shape of this divergence. Consumer payments, examined in Case 2, combine high relative advantage, high observability, and low complexity, a combination associated with the fastest, most visible adoption and the only unicorn-scale outcomes among the four cases. SME credit, examined in Case 3, exhibits lower observability and greater complexity for first-time borrowers, and its financing volumes, while substantial, remain comparatively modest relative to a large, independently documented unmet-demand gap. Regulatory infrastructure, examined in Case 1, functions as foundational regulatory infrastructure positioned upstream of both other verticals, diffusing indirectly through intermediary applications, which accounts for its comparatively low visibility among the three. This ordering broadly echoes, without directly replicating, the vertical-differentiated diffusion pattern documented by Griffiths et al. (2025) in Vietnam's fintech ecosystem, where payment services likewise achieved the highest diffusion among the seven service domains examined. The two studies differ in country, method, and analytical scope, so this convergence is best read as theoretical resonance rather than replication, a point taken up further in the discussion in Chapter 5.

Table 4.5. Diffusion of Innovation attributes by case, as evidenced in Sections 4.3–4.5

Case	Relative Advantage	Compatibility	Complexity	Trialability	Observability
1. Sandbox / Open Banking	High (on paper)	Not directly assessed	High	Low	Low
2. STC Pay / Tamara	High	High	Low (implied)	Not directly assessed	High
3. Lendo / Forus	Not directly assessed	High for Lendo (Shariah-compliant structuring); not directly	High	Not directly assessed	Low

Case	Relative Advantage	Compatibility	Complexity	Trialability	Observability
		assessed for Forus			

Note. Cells marked "not directly assessed" reflect attributes the case analysis in Sections 4.3–4.5 did not evaluate explicitly; none of these cells reflect an assumed rating. Case 4 is omitted from this table because it is a coordinating strategy, not a product with individually observable Diffusion of Innovation attributes (see Section 4.6).

Case 4, the national strategy, falls outside this ordering entirely. It is a mechanism of coordination and target-setting, not a directly observable driver of adoption, so its contribution is interpretable only through the aggregate performance of the other three cases, never in isolation. Claims regarding the strategy's effectiveness should accordingly be framed as claims about the ecosystem's combined performance under that strategy, not as an isolated causal effect attributable to the strategy document itself. The FSDP's broader program scope discussed in Section 4.6 compounds this difficulty further: because the fintech pillar operates alongside concurrent, non-fintech FSDP reforms in banking, insurance, and capital markets, evaluating the National Fintech Strategy independently of the wider program it sits within, and not only independently of the ecosystem it directly coordinates, remains an open evaluative problem this thesis identifies but does not resolve.

The competitive-landscape evidence introduced in Sections 4.4 and 4.5, Tabby and Spotii alongside Tamara and STC Pay; Raqamyah, Manafa Capital, and several further SAMA-licensed platforms alongside Lendo and Forus, reinforces this cross-case ordering. It does not complicate it. The vertical-level diffusion pattern holds across multiple competing firms within each vertical, not only for the two firms examined as this thesis's formal cases, so the ordering identified above is better read as a property of the payments, SME-credit, and infrastructure verticals themselves than as an artifact of case selection specific to STC Pay, Tamara, Lendo, or Forus individually, a distinction directly responsive to the survivorship-bias limitation acknowledged in Section 3.3.

None of these three patterns constitutes a causal claim: the analysis presented in this chapter offers a descriptive, associative reading of secondary and case-study data, consistent with the limitations specified in Chapter 3.9.

Chapter 5: Discussion

5.1 Interpretation of Findings against the Theoretical Framework

The findings presented in Chapter 4 are readily interpretable through the three theoretical strands developed in Chapter 2.4. Read against the Logic Model chain, the inputs and activities stages, comprising SAMA's regulatory instruments and the FSDP's coordinating role, have generated strong, well-documented outputs: 261 fintech firms, SAR 7.9 billion in cumulative funding, and a 79% digital-transaction share by end-2024 (Section 4.1). The outputs-to-outcomes transition tells a more qualified story. The account-ownership data in Section 4.2 show that the strategic period (2018–2024) coincided with a comparatively modest re-acceleration in inclusion in raw-point terms, smaller in magnitude than the pre-strategy gains recorded between 2011 and 2014, though the ceiling-adjusted reading developed in Section 4.2 (Table 4.7) shows this same period closing a substantially larger share of Saudi Arabia's remaining distance to global parity than any other interval examined, a genuine re-acceleration rather than a mechanical artifact of approaching a bounded metric's ceiling. This asymmetry between output performance and outcome performance is precisely the distinction the Logic Model is designed to expose. Its emergence here validates the analytical value of separating the two stages: treating output growth as a proxy for inclusion impact would have missed it entirely.

Diffusion of Innovation theory accounts for the variation observed across the four cases. The ordering identified in Section 4.7, with consumer payments diffusing fastest, SME credit diffusing more slowly, and regulatory infrastructure diffusing least visibly of all, corresponds directly to the relative advantage, observability, and complexity differentials Rogers (2003) identifies as governing adoption rate. The pace at which each case translated strategic input into observable outcome is consistent with the structural characteristics of its underlying product category, a patterning better explained by these Diffusion of Innovation attributes than

by coincidence, though the associative design applied throughout this thesis cannot rule out other contributing factors operating on the same cases.

The access-usage-quality framework clarifies what the account-ownership trend does and does not demonstrate. Because the majority of the adult population had already attained account access prior to 2018, the framework directs attention toward the usage and quality dimensions, where the evidence is more favorable: the growth in digital-transaction share (Section 4.1), the scaling of consumer payment products (Section 4.4), and the documented, if still partial, expansion of SME credit access (Section 4.5) collectively indicate that the strategic FinTech initiatives have had their clearest effect on usage intensity rather than on the headline access statistic most commonly cited in promotional reporting; the quality dimension itself remains an acknowledged evidentiary gap in this analysis, discussed further below.

The Logic Model's final stage, Impact, was introduced in Sections 2.4 and 3.6 as the broadest and least directly attributable link in the causal chain. It corresponds to Vision 2030's overall financial-sector diversification and inclusion objectives (Kingdom of Saudi Arabia, 2016; Financial Sector Development Program, 2024; Vision 2030, n.d.), not to any single fintech indicator. Assessed at this level, the evidence compiled in Chapter 4 is consistent with the fintech-related components of these objectives moving in the intended direction: non-cash transaction usage exceeded its Vision 2030 target roughly two years ahead of schedule (Section 4.1), and account ownership, digital payments, and the ecosystem's output metrics have all continued to grow across the period examined. However, Vision 2030's financial-sector pillar encompasses banking-sector reform, capital-markets development, and insurance-sector modernization alongside fintech and financial inclusion specifically (Vision 2030, n.d.), and this thesis's secondary-data, fintech-focused design supports no independent claim about the other components of that pillar, nor about whether the fintech-attributable share of Vision 2030 progress specifically, as distinct from the wider program of concurrent financial-sector reform,

drove any part of the outcome-level trend documented in Section 4.2. The Impact stage is accordingly best read as the outer boundary of what this design can speak to: the evidence fits the broader diversification objective Vision 2030 sets out, without independently verifying it.

5.2 Strategic Evaluation: Output Performance versus Inclusion-Outcome Performance

Assessed against the ecosystem's own stated targets, the strategic FinTech initiative has been effective. The 2025 firm-count target was exceeded ahead of schedule, cumulative funding exceeded its target by 204%, and the non-cash-transaction target was met approximately two years early (Section 4.1). Measured against the underlying inclusion objective these targets exist to serve, the picture is more qualified: account ownership growth during the strategic period has not matched the scale of the pre-strategy gains, and the SME credit gap documented in Section 4.2 remains substantially unaddressed by the two SME-lending platforms examined, whose combined disclosed financing represents, at most, a small proportion of the unmet demand identified in the World Bank's Enterprise Survey.

This divergence suggests that the strategic initiative is really two partially distinct achievements, not one. Measured as an ecosystem-building exercise, through firm formation, capital mobilization, and product diversification, it has performed strongly and consistently ahead of its own targets. Measured as a financial-inclusion intervention through the access-usage-quality lens established in Chapter 2.4, the picture is narrower: a contribution concentrated in usage intensity among an already-included population rather than in closing the residual access and credit gaps that remain, particularly among small firms.

5.3 Enablers and Barriers

Several factors likely account for the pattern of differential success identified above. Sustained top-down regulatory coordination across SAMA, the Capital Market Authority, and the FSDP

program office appears to have reduced the coordination costs that typically slow multi-agency reform. The sandbox mechanism has provided a low-risk pathway for product testing, used successfully by firms such as STC Pay and, indirectly, by early open-banking entrants such as Lean (Strategy& [PwC Middle East], 2021). Sovereign and international capital participation, including the Public Investment Fund's involvement through Sanabil Investments in Tamara and the substantial international facilities extended to STC Pay, Tamara, and Lendo, has provided a scale of financing unlikely to be available through domestic capital markets alone. A further, less visible enabler is regulatory-design quality itself: SAMA's Cyber Security Framework, in force since 2017 and requiring pre-licensing compliance from fintech firms specifically (Section 2.6), and its BNPL-specific affordability, fee-cap, and complaint-handling provisions (Section 4.4), address exactly the cybersecurity and over-indebtedness concerns discussed as regulatory barriers in Section 2.6, suggesting the regulatory environment has been comparatively proactive in anticipating quality-dimension risks even where this thesis could not locate outcome-level data confirming the framework's practical effect.

The barriers run in the opposite direction. The complexity and low trialability of Open Banking for the end consumer, discussed in Section 4.3, appear to constrain the rate at which this foundational infrastructure translates into visible inclusion outcomes, notwithstanding its clear relative advantage on paper. The SME credit gap identified in Section 4.2 persists despite active lending platforms, which suggests that platform-level innovation alone has not been sufficient to close a gap of this scale. Financial literacy constitutes a further, more general barrier that cuts across all four cases; it is not specific to any one of them: SAMA's own reporting places basic financial literacy at only approximately 38% of adults by 2023, well short of Vision 2030's 60% target (Section 2.6), which likely constrains usage-dimension outcomes, a consumer's ability to select an appropriate BNPL product, judge a P2P lending platform's terms, or use an Open Banking-enabled application safely, independently of whichever specific

fintech product or infrastructure a consumer is exposed to. One further barrier is evidentiary, not operational: the thinness of the Saudi-specific peer-reviewed literature, discussed in Chapter 2.6, limits the confidence with which any evaluation, including this one, can attribute observed trends to specific policy mechanisms rather than to concurrent structural change.

5.4 Comparison with Regional and Global Evidence

The pattern identified in this thesis is broadly consistent with the global literature's characterization of the fintech-inclusion relationship as positive but conditional (Ha et al., 2025; Del Sarto & Ozili, 2025). Those systematic reviews specifically flag a shortage of evidence demonstrating tangible, mechanism-level impact as distinct from market presence, and the output-outcome divergence documented in Chapter 4 illustrates precisely this distinction within a single national case. The regional econometric evidence (Al-Smadi, 2023; Mashoene et al., 2025) finds a positive panel-level relationship between digital finance and financial inclusion across MENA and broader emerging-market samples. That finding is consistent with the associative Saudi trend identified here, though not independently confirmed by it: this thesis's non-causal design cannot adjudicate between a genuine strategic-FinTech contribution and concurrent structural change, a limitation shared with much of the panel literature it draws on.

Griffiths et al. (2025) offer theoretical resonance here, not direct replication. Their qualitative "Knowledge Café" study of Vietnam's fintech ecosystem documents an unevenness across seven fintech service domains broadly consistent with the vertical-differentiated diffusion pattern identified in Section 4.7: payment services reach the highest diffusion, while credit-adjacent alternative-finance services capture a markedly smaller share of the market. The two studies differ in country, method, and analytical scope, seven service domains examined through stakeholder dialogue in Vietnam versus four purposively selected cases examined

through documentary analysis in Saudi Arabia, so this convergence is best read as two independent pieces of evidence pointing toward a similar pattern, differential relative advantage and observability by vertical. It is not a validated, cross-nationally generalizable mechanism.

The GCC comparison introduced in Section 2.6 (Table 2.1) bears directly on the ceiling-adjusted reading developed in Section 4.2. The UAE and Bahrain, both considerably ahead of Saudi Arabia on fintech-ecosystem scale, the UAE's Dubai International Financial Centre alone hosts roughly four times as many fintech firms as Saudi Arabia's entire ecosystem, reached account-ownership levels comparable to Saudi Arabia's 2024 figure of 78.84% approximately a decade earlier, and have shown essentially flat or slightly declining account-ownership trajectories since. This is instructive for interpreting Saudi Arabia's own 2021–2024 re-acceleration: if a considerably larger, more mature fintech ecosystem (the UAE's) coincides with account-ownership stagnation once a country nears the same ~80–88% band Saudi Arabia is now entering, ecosystem scale alone does not appear to be a sufficient condition for continued outcome-level growth near saturation. This strengthens the ceiling-adjusted argument advanced in Section 4.2 instead of undermining it: the deceleration pattern this thesis documents for Saudi Arabia (Table 4.1) is not a symptom of an under-scaled fintech ecosystem specifically, since both larger, more established GCC ecosystems display the same or a more pronounced plateau at a similar point along the same bounded metric. At the same time, this comparison should not be overstated: this thesis conducted no case-level analysis of UAE or Bahraini fintech firms, and the account-ownership comparison in Table 2.1 draws on the same three-instrument evidentiary base as the Saudi analysis (Findex, aggregate ecosystem reporting, and secondary press) rather than on a parallel multi-case evaluative design; the comparison is offered as corroborating context for the ceiling-adjustment argument, not as an independent evaluation of UAE or Bahraini financial inclusion policy.

Relative to the existing Saudi-specific literature, this thesis extends Noreen's (2024) conceptual SDG mapping into empirical, secondary-data-based evaluation, addressing the empirical gap identified in Section 2.7 that the existing Saudi-specific literature does not fill.

Table 5.1. This thesis's findings relative to the cited literature

Source	Study Type and Scope	Key Finding	Relation to This Thesis
Ha et al. (2025)	Systematic review, 96 papers (Web of Science, Scopus, EBSCO)	Fintech-inclusion relationship is positive but conditional; few studies demonstrate mechanism-level impact beyond market presence	The output-outcome divergence documented in Chapter 4 directly addresses this gap at a single-country level
Del Sarto & Ozili (2025)	Bibliometric analysis	Whether fintech reaches marginalized populations, versus deepening usage among the already-included, remains understudied	The SME credit gap findings (Sections 4.2, 4.5) and the usage-concentration reading in Section 5.1 bear directly on this question
Al-Smadi (2023)	System-GMM panel, 12 MENA countries, 2004–2020	Digital finance significantly and positively predicts a composite financial inclusion index	Consistent with the Saudi account-ownership trend, though this thesis's non-causal design cannot independently confirm the relationship
Mashoene et al. (2025)	System-GMM panel, 28 emerging/developing economies, 2011–2021	1% increase in fintech-adoption proxy associated with a 0.177-unit increase in a PCA-constructed inclusion index	Coefficient treated with explicit caution (Section 2.3) given the publishing venue's editorial rigor and the absence of independent replication; not relied upon here
Griffiths et al. (2025)	Qualitative, three-stage "Knowledge Café" method, Vietnam's fintech ecosystem across seven service domains	Diffusion is markedly uneven across domains; payments/transactions reach the highest maturity while alternative-finance (credit-type) services capture a substantially smaller market share	Broadly resonant with, though not a direct replication of, Section 4.7's cross-case ordering (payments fastest, SME credit and infrastructure slower); differs in country, method, and scope
Noreen (2024)	Conceptual mapping, Saudi Arabia	Saudi fintech ecosystem linked conceptually to SDGs 1, 2, 5, 8, and 17	This thesis extends this conceptual mapping into empirical, secondary-data-based evaluation

5.5 Theoretical Contribution

This thesis contributes an integrated evaluative framework, combining the Logic Model, Diffusion of Innovation, and the access-usage-quality framework, that has not previously been applied to Saudi Arabia's strategic FinTech initiatives using verified secondary data. Each framework performs a distinct analytical function within this integration: the Logic Model separates output success from outcome success, a distinction the existing Saudi-specific literature does not draw explicitly; Diffusion of Innovation explains the rate at which this translation occurs across different fintech verticals; and the access-usage-quality framework prevents the conflation of usage-intensity growth with access-level growth, a conflation evident in the "success story" framing common in industry reporting and identified explicitly in Section 4.2. This integration directly addresses the gap identified in Chapter 2.7. Its structure, an integrated Logic Model/Diffusion of Innovation/access-usage-quality design applicable to any single-country fintech-inclusion evaluation, is in principle suited to comparable evaluations in other GCC and emerging-market contexts; this thesis, however, applies the framework to one country only, and its transferability to a different regulatory environment remains a claim for future replication to test (Section 6.6) rather than a demonstrated result.

5.6 Practical and Policy Implications

Four implications follow from these findings, each tied to a different actor.

SAMA, the Capital Market Authority, and the FSDP program office would gain evaluative value from reporting outcome-level indicators, such as Findex-based account ownership and usage metrics, alongside the output-level indicators (firm count, funding, digital-transaction share) that currently dominate official reporting. The present analysis shows these two categories of indicator do not move in tandem.

For Open Banking specifically, the complexity and low trialability constraining consumer adoption, identified in Section 4.3, point toward a role for consumer-facing education and

simplified onboarding pathways within third-party applications, particularly given the framework's demonstrated relative advantage on paper.

On the SME credit gap documented in Section 4.2, the disclosed financing volumes of Lendo and Forus, while substantial in absolute terms, address only a fraction of the unmet demand identified in the Enterprise Survey. This leaves room to extend an existing instrument, the Kafalah SME credit-guarantee program discussed in Section 6.3, to cover licensed fintech platforms specifically, without building an entirely new credit-guarantee scheme.

Finally, the analytical difficulty of evaluating the National Fintech Strategy independently of the ecosystem it coordinates, discussed in Section 4.6, suggests FinTech Saudi and the FSDP program office would benefit from a clearer attribution methodology, one that distinguishes the strategy's coordinating contribution from the aggregate performance of the firms operating under it, and from the concurrent progress of the FSDP's non-fintech sub-sectors discussed in Section 4.6.

A fifth implication follows from the quality-dimension and cybersecurity/financial-literacy discussion introduced in Sections 2.6 and 4.4. SAMA's existing BNPL regulation and Cyber Security Framework already address over-indebtedness and cyber-risk at the level of regulatory design; the gap this thesis identifies is at the level of public outcome reporting specifically; SAMA and the Consumer Protection function could usefully begin publishing aggregate, anonymized complaint-volume and resolution-time statistics for the BNPL sector, converting an existing internal complaint-handling requirement (Article 17 of the BNPL rules, Section 4.4) into public confirmatory evidence that the quality dimension of financial inclusion is being met in practice rather than only in regulatory design.

Chapter 6: Conclusion and Recommendations

6.1 Summary of Key Findings

This thesis has evaluated the relationship between Saudi Arabia's strategic FinTech adoption initiatives and financial inclusion outcomes using secondary data and a multi-case evaluative design. Three principal findings emerge from this analysis. The output layer of the strategic initiative, comprising firm formation, capital mobilization, and digital-transaction growth, has performed strongly and consistently ahead of the ecosystem's own targets (Section 4.1), while the outcome layer, measured through Global Findex account-ownership data, shows a more modest re-acceleration during the strategic period than the pre-strategy gains recorded between 2011 and 2014, indicating that output growth and inclusion-outcome growth have not moved in proportion to one another (Section 4.2). The four cases examined, in turn, diffuse at markedly different rates, an ordering that corresponds closely to the relative advantage, observability, and complexity attributes Diffusion of Innovation theory identifies as governing adoption (Section 4.7), with consumer payments diffusing fastest and SME credit and regulatory infrastructure diffusing more slowly.

6.2 Answering the Research Questions

RQ1 asked what strategic FinTech adoption initiatives Saudi Arabia has implemented since 2018 and what financial inclusion objectives they target. This thesis identifies four principal initiatives: the SAMA Regulatory Sandbox (2018), the Open Banking Policy and subsequent Framework (2020, with Account Information Services from November 2022 and Payment Initiation Services from September 2024), the National Fintech Strategy (approved as an FSDP pillar in May 2022), and the coordinating FSDP program itself, all of which explicitly target expanded non-cash transaction usage and increased financial inclusion as stated Vision 2030 objectives (Sections 2.5, 4.1).

RQ2 asked what secondary financial inclusion indicators show over the period these initiatives have been active. Account ownership rose from 74.32% in 2021 to 78.84% in 2024, a re-acceleration following an earlier plateau but smaller in magnitude than the 2011–2014 gains; the digital transaction share reached 79% by end-2024; and SME credit access remains a documented gap, with only 14% of small Saudi firms holding a bank loan against a stated obstacle rate of 60% (Section 4.2). A ceiling-adjusted reading of the same account-ownership data qualifies the raw-point comparison: the 2021–2024 interval closed 96.6% of Saudi Arabia's remaining distance to the global average account-ownership rate, the largest share of any interval examined (Table 4.7). Disaggregating this trend further, gender and income gaps in account ownership have narrowed, not widened, across the period these initiatives have been active, with the gender gap falling from 57.49 points in 2011 to 8.35 points by 2024 and the income gap falling from 22.13 to 7.04 points over the same span (Table 4.6).

RQ3 asked what the four case studies reveal about the mechanisms, enablers, and barriers linking FinTech adoption to financial inclusion outcomes. The cases indicate that adoption speed is governed by the perceived attributes of each fintech vertical: high relative advantage and observability drove rapid consumer-payments adoption (Case 2), while higher complexity constrained both SME credit uptake (Case 3) and consumer engagement with Open Banking infrastructure (Case 1), and the national strategy (Case 4) operates as an indirect coordinating mechanism rather than a directly observable driver (Sections 4.3–4.7).

RQ4 asked what strategic recommendations follow for policymakers and FinTech stakeholders. These recommendations are presented in Section 6.3 below.

Table 6.1. Summary of research questions and key findings

Research Question	Key Finding	Section
RQ1: What initiatives, targeting what objectives?	Four principal initiatives (Sandbox, Open Banking, National Fintech Strategy, FSDP),	2.5, 4.1

Research Question	Key Finding	Section
	all targeting non-cash transaction growth and financial inclusion under Vision 2030	
RQ2: What do secondary indicators show?	Account ownership re-accelerated (74.32%→78.84%, 2021–2024) but below pre-strategy growth rates; digital transaction share reached 79%; SME credit gap remains (14% vs. 60% obstacle rate)	4.2
RQ3: What do the cases reveal about mechanisms?	Adoption speed tracks Diffusion of Innovation attributes: payments (Case 2) fastest, SME credit and regulatory infrastructure (Cases 1, 3) slower, national strategy (Case 4) only indirectly observable	4.3–4.7
RQ4: What strategic recommendations follow?	Stakeholder-specific recommendations for SAMA/CMA/FSDP, Open Banking administration, SME credit policy, and FinTech Saudi attribution methodology	6.3

6.3 Strategic Recommendations

For SAMA, the Capital Market Authority, and the FSDP program office, this thesis recommends adding a dedicated outcome-level module, reporting Findex-based account-ownership and payment-usage indicators disaggregated by gender and income group (Section 4.2, Table 4.6), to the existing jointly produced Annual Fintech Report (Fintech Saudi et al., 2025), which currently reports only output-level indicators such as firm count, funding, and digital-transaction share. This is a modest addition to a reporting vehicle that already exists and is already published annually. It is not a new reporting obligation, and it would allow the ecosystem's own future reporting to distinguish output growth from inclusion-outcome growth in the way this thesis's Logic Model analysis (Section 4.1, 4.2) has shown they do not automatically move together.

For SAMA specifically, in its administration of the Open Banking Framework, this thesis recommends extending the financial-education and clear-disclosure obligations already

imposed on financial institutions under the Financial Consumer Protection Principles and Rules (SAMA, n.d.-a) to the third-party applications built on Open Banking rails specifically, since these principles were framed for direct bank-consumer relationships and do not by their own terms address the indirect, intermediated relationship Open Banking creates. Open Banking should not be treated as a wholesale-only infrastructure layer outside that framework's scope; requiring Open Banking-enabled third-party providers to meet the same disclosure and consumer-education standard would address the complexity and low trialability constraints identified in Section 4.3 by closing a specific gap in an existing rule, without requiring a freestanding education campaign.

For FinTech Saudi and the FSDP program office, this thesis recommends adopting a variant of the Logic Model indicator structure developed in this thesis (Table 3.1, Section 3.6), which separates input, activity, output, and outcome indicators explicitly, as the basis for an attribution methodology capable of distinguishing the National Fintech Strategy's coordinating contribution from the aggregate performance of the firms and initiatives operating under it, addressing the evaluative difficulty documented in Section 4.6. This recommendation offers the ecosystem's official reporting a structure already applied and tested against Saudi-specific data in this thesis, so FinTech Saudi would not need to develop an evaluative framework from first principles.

For policymakers concerned with SME financial inclusion, this thesis recommends extending the existing Kafalah SME Finance Guarantee Program, a Ministry of Finance/Saudi Industrial Development Fund partnership with Saudi banks that distributed more than SAR 15 billion (US\$4 billion) in guaranteed SME financing in 2020 alone through a network of 33 SAMA-licensed financial institutions (Arab News, 2021, reporting Kafalah program figures), to cover portfolio-level guarantees for SAMA-licensed fintech invoice-financing and P2P lending platforms such as Lendo and Forus specifically, extending beyond bank lending alone.

Kafalah's guarantee mechanism currently operates through its partner-bank network; the two SME-fintech platforms examined in this thesis operate largely outside that network, disclosing financing volumes that, even combined, address only a fraction of the unmet SME credit demand documented in the World Bank's 2025/2026 Saudi Arabia Enterprise Survey (Sections 4.2, 4.5). Extending an existing, proven guarantee mechanism to these specific licensed platforms would add a concrete instrument to a segment where a financing gap has been documented. A comparable scheme, Kafalah, already operates successfully in the adjacent bank-lending channel, so a new credit-guarantee program is not needed to close this gap.

For SAMA's Consumer Protection function, this thesis recommends converting an existing internal obligation into public reporting: SAMA's BNPL regulation already requires licensed providers to maintain documented complaint-handling procedures (Article 17, discussed in Section 4.4), but this thesis could not locate any published aggregate statistics on complaint volumes, resolution times, or arrears rates arising from that requirement. Publishing anonymized, aggregate versions of this data annually, alongside the outcome-level module recommended above, would convert the quality dimension of the access-usage-quality framework from an acknowledged evidentiary gap (Section 4.4) into a measured, publicly verifiable outcome, at comparatively low administrative cost given that the underlying complaint-handling infrastructure this recommendation builds on is already mandated.

6.4 Contribution to Knowledge

This thesis contributes a verified, methodologically transparent evaluation of Saudi Arabia's strategic FinTech initiatives, addressing a gap the existing literature explicitly identifies but has not yet filled at the country level (Chapter 2.7). Its principal theoretical contribution is the integration of the Logic Model, Diffusion of Innovation, and the access-usage-quality framework into a single evaluative approach, applied here to a single-country case and

structurally suited to, but not itself tested through, replication in comparable GCC and emerging-market contexts (Section 5.5, Section 6.6).

This contribution is distinct for different readers. For financial-inclusion researchers, the ceiling-adjusted reading of account-ownership growth developed in Section 4.2 (Table 4.7) offers a reusable analytical technique for any bounded-metric evaluation approaching saturation, not specific to Saudi Arabia or to fintech; the GCC comparison in Section 2.6 and Section 5.4 (Table 2.1) provides preliminary cross-national evidence that this ceiling pattern is not idiosyncratic to the Saudi case. For methodologists, the explicit coding scheme documented in Section 3.5 (Table 3.4), separating deductive, theory-derived categories from inductive, emergent ones, offers a transparent, auditable alternative to less structured qualitative case analysis. For Saudi and GCC policymakers specifically, the disaggregated account-ownership findings (Table 4.6) and the case-screening log (Appendix C) offer two concrete outputs beyond the thesis's own headline argument: a demonstration that gender and income gaps in account ownership narrowed, not widened, during the strategic period, a finding that qualifies, without contradicting, this thesis's central usage-concentration argument, and a documented account of which fintech firms were and were not examined, supporting more targeted policy attention to the licensed platforms outside this thesis's four-case scope.

6.5 Limitations

The findings presented in this thesis are subject to the limitations detailed in Chapter 3.9: reliance on secondary and case-study data restricts the findings to association and documented mechanism rather than statistically established causation; purposive case selection limits statistical, as opposed to analytic, generalizability, compounded by the survivorship-bias risk discussed in Section 3.3, since the four cases examined are market leaders within their verticals and not representative of each vertical as a whole; several primary official documents required

corroboration through independent secondary coverage instead of direct verification; and the underlying Saudi-specific peer-reviewed literature remains thin, placing comparatively greater analytical weight on regional evidence in places.

6.6 Directions for Future Research

Five directions for future research follow from the limitations identified above.

- Primary data collection, through surveys of unbanked and underbanked populations or interviews with SAMA and FSDP officials, would permit testing of the causal hypotheses this thesis could only evaluate associatively.
- As further Findex and FAS rounds accumulate beyond 2024, time-series econometric analysis could test more rigorously whether the 2021–2024 re-acceleration in account ownership continues and whether it can be attributed statistically to specific regulatory milestones.
- Replication of the integrated evaluative framework developed in this thesis in other GCC states, extending beyond the descriptive account-ownership comparison with the UAE and Bahrain offered in Sections 2.6 and 5.4 into a full multi-case evaluation, would permit comparative analysis of how differing regulatory approaches affect the output-outcome relationship identified here.
- Obtaining financial-literacy data disaggregated by gender, income, and region, which this thesis could not locate during data collection (Section 2.6), would permit a direct test of whether Saudi Arabia's financial-literacy gap tracks the same subgroups as the account-ownership convergence documented in Table 4.6, or diverges from it.
- Primary or administrative data on BNPL arrears, complaint volumes, and dispute-resolution outcomes, the quality-dimension evidentiary gap acknowledged in Section

4.4, would allow a future study to test directly whether SAMA's BNPL affordability and exposure-cap provisions are achieving their intended consumer-protection effect, rather than relying on regulatory design as a proxy for regulatory outcome.

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Appendices

Appendix A: Consolidated Account-Ownership Dataset

Table A.1 consolidates the aggregate, gender-disaggregated, and income-disaggregated Saudi account-ownership data presented separately in Chapter 4 (Tables 4.1 and 4.6), alongside the GCC-comparative data introduced in Chapter 2 (Table 2.1), into a single reference table. All figures are retrieved directly from the World Bank DataBank/Global Findex API (World Bank, n.d.-a).

Table A.1. Consolidated account-ownership dataset, Saudi Arabia, UAE, and Bahrain (% of relevant population 15+)

Year	Saudi (Total)	Saudi (Female)	Saudi (Male)	Saudi (Poorest 40%)	Saudi (Richest 60%)	UAE (Total)	Bahrain (Total)
2011	46.42%	15.23%	72.72%	32.77%	54.90%	59.73%	64.51%
2014	69.41%	61.15%	75.33%	64.82%	72.87%	83.74%	81.94%
2017	71.70%	58.17%	80.54%	64.56%	76.44%	88.21%	82.61%
2021	74.32%	63.49%	81.67%	66.61%	79.43%	85.74%	—
2024	78.84%	73.46%	81.81%	74.62%	81.66%	—	82.32%

Note. Indicators *FX.OWN.TOTL.ZS*, *FX.OWN.TOTL.FE.ZS*, *FX.OWN.TOTL.MA.ZS*, *FX.OWN.TOTL.40.ZS*, *FX.OWN.TOTL.60.ZS* (World Bank, n.d.-a). Blank cells indicate the indicator was not available for that country-year in the World Bank DataBank at the time of retrieval, rather than a value of zero.

Appendix B: Source Verification Log

Table B.1 records the tier classification (Section 3.4) and verification status of the sources most load-bearing to this thesis's central quantitative claims, supporting the confirmability protocol described in Section 3.7.

Table B.1. Verification status of key quantitative sources

Source	Tier	Verification Status
World Bank Global Findex account-ownership indicators (total, gender, income)	1	Retrieved directly from the World Bank DataBank API for this analysis; primary data

Source	Tier	Verification Status
Fintech Saudi et al. (2025) Annual Fintech Report	2	Official joint-agency ecosystem reporting; corroborated by KPMG (2024) independent analysis
World Bank Enterprise Surveys (2026)	1	Primary survey data, corroborated via EnterpriseAM (2026) reporting
Mashoene et al. (2025)	4 (academic, lower confidence)	Coefficient not independently replicated elsewhere; publishing venue's editorial rigor flagged; not relied upon for this thesis's own claims (Section 2.3)
International Monetary Fund (2018) Selected Issues report	1	Report identified and cited; full text could not be directly text-extracted (access restriction encountered); attribution relies on independent secondary corroboration (Section 4.2)
SAMA Rules for Regulating BNPL Companies (2023b)	1	Full regulatory text directly retrieved; specific articles (17, 19, 20, 22) quoted directly
Griffiths et al. (2025)	4 (academic)	Full source content verified directly; country scope and service-domain count corrected from an earlier working draft (Section 2.3, 4.3, 4.7, 5.4)

Appendix C: Case-Screening Log

Table C.1 documents the excluded candidate cases considered during case selection (Section 3.3), supporting the dependability of the screening process against the survivorship-bias limitation acknowledged there.

Table C.1. Excluded candidate cases by vertical

Vertical	Case(s) Selected	Viable Alternatives Considered	Reason Not Selected
Payments/BNPL	STC Pay, Tamara	Tabby (\$3.3bn valuation, Feb 2025); Spotii (SAMA BNPL permit, 2023)	Tamara and STC Pay offered more extensively documented Saudi-specific financial detail at the time of data collection
SME/P2P Lending	Lendo, Forus	Raqamyah (SAMA-licensed since 2019); Manafa Capital (CMA/SAMA-licensed since 2018)	Lendo and Forus's more recent, larger-value financing facilities received more thorough business-press coverage

Vertical	Case(s) Selected	Viable Alternatives Considered	Reason Not Selected
Regulatory/Infrastructure	SAMA Sandbox/Open Banking	Tarabut Gateway (SAMA-licensed open banking provider)	This case was defined at the national-framework level rather than the individual-provider level; a direct substitution is not applicable

Note. This log does not exhaust every fintech firm active in each vertical; it records the specific alternatives identified and weighed during case selection, consistent with the disclosure standard described in Section 3.4.

Appendix D: Consolidated Regulatory Timeline

Table D.1 consolidates the dated regulatory and case milestones referenced throughout Chapters 1, 2, and 4 into a single chronological reference.

Table D.1. Consolidated Saudi FinTech regulatory and case timeline

Date	Milestone	Source
25 Apr 2016	Vision 2030 launched	Kingdom of Saudi Arabia (2016)
2013	Wage Protection Program made mandatory for private-sector establishments	Ministry of Human Resources and Social Development (n.d.)
2018	SAMA Regulatory Sandbox established	SAMA (2018)
2020	SAMA Open Banking Policy issued	SAMA (2020)
Mar 2020	STC Pay licensed as a non-bank e-wallet firm	Argaam (2020)
May 2022	National Fintech Strategy approved as an FSDP pillar	Ministry of Finance (2022)
Nov 2022	Open Banking Framework, Account Information Services live	SAMA (2022)
Dec 2023	SAMA BNPL company regulation published	SAMA (2023b)
Dec 2023	Tamara reaches unicorn status	Arab News (2023)
Sept 2024	Open Banking Framework, Payment Initiation Services live	SAMA (2022)
End 2024	Ecosystem reaches 261 firms, 79% digital-transaction share	Fintech Saudi et al. (2025)

Note. This table is a navigational aid consolidating dates already cited individually throughout Chapters 1, 2, and 4; it introduces no claim not already sourced elsewhere in this thesis.

Appendix E: FSDP Program Scope Beyond FinTech

Table E.1 records selected non-fintech Financial Sector Development Program (FSDP) indicators, offered as context for the Section 4.6 discussion of the difficulty of isolating the fintech pillar's own marginal contribution to Vision 2030's financial-sector diversification objective from the concurrent reform of other FSDP sub-sectors.

Table E.1. Selected FSDP indicators outside the fintech pillar, 2017 vs. end-2024

Indicator	2017	End-2024	Change
Asset management industry (assets under management)	SAR 391 billion	SAR 1.0+ trillion (~US\$266.7bn)	+169%
Registered investment funds	577	1,549	+168%
Fintech firms licensed by the Insurance Authority specifically	—	14 (of 261 total)	—
Fintech firm count, 2030 program target	—	525 (2024 actual: 261)	Current count is roughly the midpoint of this longer-horizon target

Note. Arab News (2025b), reporting Financial Sector Development Program 2024 milestones. These figures are not fintech-specific, except where noted, and are outside this thesis's four-case scope (Section 3.3); they are included here only as context for the FSDP's broader program mandate, discussed in Section 4.6.