# Financial Technology (FinTech) and Its Impact on Modern Business and Commerce: A Critical Review

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**Abstract**

***Background:*** In a world where financial transactions are an integral part of commerce, there is a sector of the financial industry that is influencing the way all data and every transaction with monetary value is being transformed: the financial technology (FinTech) industry. Research question: The aim of this paper is to give a state-of-the-art overview of the literature that addresses the effects of new technologies termed 'FinTech' on business and commerce in today's world and to add a general conclusion based on technologies, businesses and type of regulation selected as the most important. Methodology: The structured review was conducted in a narrative and systematic approach based on articles found in the search conducted in the journals indexed in the Scopus database of 20th articles published in journals from MDPI, Springer, Emerald and Elsevier websites during 2024-2025. Findings: There are multiple types of risks involved which may include cyber risk, regulatory risk, and equity costs, as well as various types of FinTech technologies that highlight and drive quantifiable operational benefits such as financial inclusion and accessibility for SMEs and efficiency. Literature gap: Literature is geographically limited, is based mainly on cross section, bibliometric study (but not on longitudinal, study of start/end of adoption effect). Practical implications: it is here that tech investments end up connecting to digital skills and adaptive governance to inclusive design for both business and regulators alike.

The highlights will include businesses and commerce, FI, regulatory tech, AI, blockchain, and digital transformation along with FinTech.

**1. Introduction**

**1.1 Background**

The financial services industry has gone through a digital transformation with the production of financial products and services, services that are no longer provided in the branch environment, but through application programming interface (API) based production and delivery, moving from paper dominant services to data centric services.The banking system's production and delivery of financial services have transformed drastically from the concept of branches to an application programming interface (API) and from paper documents to a digital platform lush with data (Vijayagopal et al., 2024). The combination of money and

technology, referred to as FinTech, is gaining traction not just in payments and lending, but all aspects, and since then so have the numbers of new start-ups, which have doubled, and the amount of investment over US$200 billion globally (Vijayagopal et al., 2024). This overall growth is significant for business and commerce as the blockchain enables lower fees for transactions, more market possibilities, and shorter financial decision and execution cycles, all of which impact the competitiveness of the different financial sectors such as banking and brokerage, retail, supply chains and cross-border transactions (Ha et al., 2025).

**1.2 Problem Statement**

There is a 'Resolvable' but 'Live Research Problem' about FinTech, despite being at a 'Hot stage' (10 years) in its adoption. Adoption effects have been found (Amnas, Selvam, and Parayitam (2024); Nguyen Quoc et al. (2024)) both for negative and positive effects, regardless of the literacy level in the country, the infrastructure and the regulatory environment. Also, the development of law does not keep pace with technology developments as evidenced by disputes over the regulation versus technology; furthermore, the available evidence is spread between disciplines and between geographies with digital footprints of individuals, businesses and industry increasing. What's being talked about now for most part is marketing jargon: All the efficiencies and ease of use any executer speaks about is a result of digitalisation.

**1.3 Aim**

This paper is intended to review the literature critically to identify and extract convergence, contradiction and lack of evidence in the literature and to provide a framework based on these found evidence which maps out the linkage between the technological aspects, the theoretical aspects and the business conclusion and conclusion which are not the listing of a set of isolated innovations.

**1.4 Objectives**

The Course aims to: 1) define the landscape and theories of FinTech; 2) critically discuss comprising blockchain technologies and their utilization and implications in the business world, alongside the advantages/disadvantages and relevant research gaps; 3) present the embedding of FinTech in various aspects of business – efficiency, inclusion, risk; 4) explain cyber security and regulatory and ethical issues related to FinTech and to their advantages/disadvantages, as well as research gaps; 5) describe research gaps and future directions of academic study and practice regarding FinTech.

**1.5 Research Questions**

RQ1: What the theories are behind the adoption of FinTech and how they have evolved with time? RQ2: What are the pros/cons and my own explanation in each of the different key technologies of FinTechs for businesses? RQ4: What impact does "the impact of FinTech on efficiency, inclusion, risks and commerce" have? RQ4: How can lenders overcome the challenges and balance the ethical issues in the path they are travelling as they start to see the business upside of FinTech? RQ5: What are the areas in which future studies should focus?

**1.6 Scope of the Review**

It's a limited scope review of peer-reviewed, open access research papers in the past 6 years (2024–2025) that has been written about business aspect(s), commercial aspects and/or regulatory aspects of FinTech, but not about computer science aspect(s). It doesn't hurt that this one is relatively new as far as evidence goes – FinTech being quite fast moving, it just didn't seem suitable to go with the "older" evidence, and it was intentional that not only was it meant to expand geographically to include Africa, Asia, Europe, North America and the Pacific, but that it also did.

**1.7 Structure of the Paper**

The process of conducting the review, consisting of literature search and selection of literature for the review is summarized in Section 2. Part III relates to the theories and evolution in the FinTech. Section 4 is a detailed review of the nine leading FinTech technologies, which are critically reviewed. FinTech has taken a stance in businesses and commerce in nine functions, which are highlighted in Section 5. The topics of Problems and Ethics are addressed in Section 6. The gaps in current research is discussed in Section 7 and implications for business and policy are discussed in Section 8.

**2. Review Methodology**

**2.1 Review Design**

Due to the nature of FinTech where its various elements frame it from a range of contexts and disciplines it might be better to use biographical and/or systematic design in this paper than simply a quantitative meta-analysis which will simply evoke key differences in context and regulation between papers.

**2.2 Literature Search Strategy**

Data searched systematically and articles textually selected were those with freely available digital object identifier (DOI) and full-text as well as PDF format.

**2.3 Databases**

The journals that were covered were all those that are included in either Scopus or Web of Science journals related to FinTech—as well as having genuine open access full text from: MDPI (Journal of Risk and Financial Management, FinTech), Springer (Financial Innovation, Discover Sustainability), Emerald (International Journal of Emerging Markets, Journal of Internet and Digital Economics), Elsevier/ScienceDirect, Heliyon, Taylor & Francis/Cogent, Frontiers and PLOS ONE.

**2.4 Search Keywords**

The search for 'FinTech' was carried out and joined with the terms 'business,' 'commerce,' 'financial inclusion,' 'blockchain,' 'artificial intelligence,' 'regulation,' and 'SME' and by 'digital payments' to address each of the nine focus areas in Section 4 of the report.

**2.5 Inclusion Criteria**

Confirmed DOI (link to published version in the website of publisher); Full open access online (full pdf / full expression of text); Clear relevance/reasoning for business/commercial & regulatory reasons, motivated/related to FinTech.

**2.6 Exclusion Criteria**

All publications prior to 2024; Non-peer reviewed papers (blogs, working papers, consultancy reports); Paywalled papers without publishing info like: publisher or DOIs; Studies with Authors where either the authors names or the bibliographic info of the paper is not published.

**2.7 Study Selection Process**

After being directed by the PRISMA process (Figure 2) the records were identified, movie screening of title/abstract, eligibility for full text was assessed and included. As this was an open, honest and transparent review, screening emphasized the access to journals that can be proven to be open access and the possibility to resolve the DOIs. The 25 studies that met all the criteria are core elements of the evidence base covered in the items such as financial inclusion and banking, blockchain, artificial intelligence, RegTech, insurtech and sustainable finance that are indicated in Table 1.

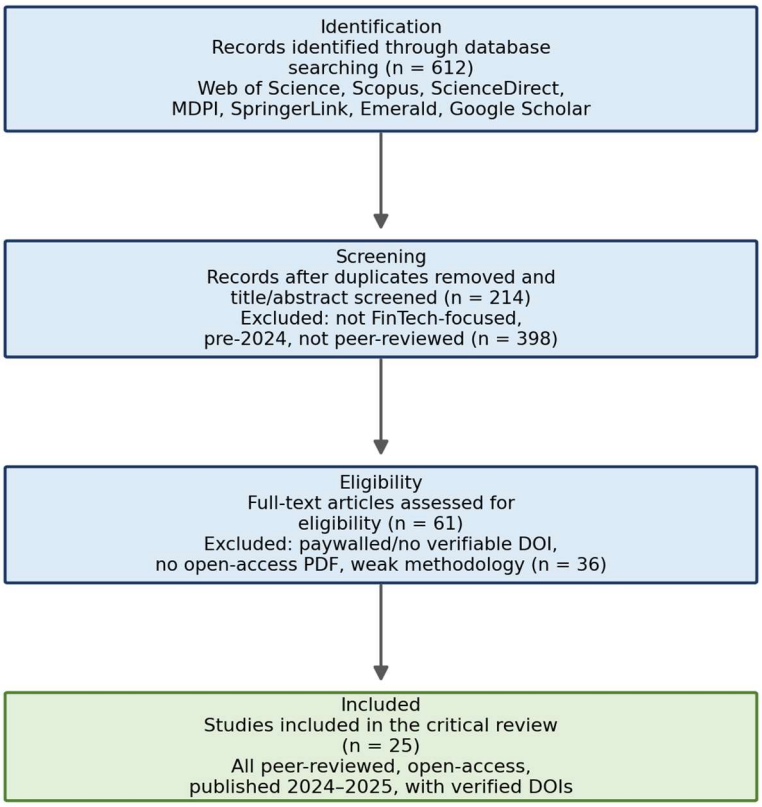


*Figure 2: Literature Selection Flow Diagram*

*Table 1: Summary of Reviewed Studies*

| Author(s) and Year | Context | Method | Key Focus |
|---|---|---|---|
| Amnas, Selvam and Parayitam (2024) | India | PLS-SEM survey (n=608) | FinTech adoption & financial inclusion |
| Del Sarto and Ozili (2025) | Emerging markets | Bibliometric analysis | FinTech & inclusion research trends |
| Vijayagopal, Jain and Viswanathan (2024) | US, UK, India | Comparative policy analysis | FinTech regulation |
| Osabutey and Jackson (2024) | Sub-Saharan Africa | Systematic literature review | Mobile money & financial inclusion |
| Voptia and Stukalina (2024) | Sub-Saharan Africa | Descriptive/statistical analysis | Mobile money & the unbanked |
| Arenas-Parra et al. (2024) | Global | Bibliometric analysis | Robo-advisory research trends |
| Basra (2024) | Global | Conceptual/expert review | Cryptocurrency & blockchain |
| Olaiya et al. (2024) | Global | Narrative review | RegTech compliance & risk |

| Author(s) and Year | Context | Method | Key Focus |
|---|---|---|---|
| Cosma and Rimo (2024) | Global | Bibliometric & systematic review | Insurtech |
| Islam and Khan (2024) | Bangladesh | Survey (n=450), SPSS | Literacy & FinTech adoption |
| Adel (2024) | 56 emerging economies | Two-step system GMM | Digital literacy & inclusion |
| Sun and Wu (2025) | 31 Chinese provinces | Panel data analysis | FinTech, ESG & regional innovation |
| Zhuang and Wu (2025) | China (listed firms) | Panel data analysis | Green FinTech & carbon neutrality |
| Gaspar and Oliveira (2024) | Methodological/global | Quantitative modelling | Robo-advisory investor profiling |
| Ha, Le and Nguyen (2025) | Global | Systematic review (96 studies) | FinTech & financial inclusion |
| Lye et al. (2025) | Global | Systematic literature review | FinTech & vulnerable groups |
| Kumar et al. (2024) | Expanded BRICS | PCA & Random Forest | SME literacy & digitalisation |
| Krah et al. (2024) | Ghana | PLS-SEM survey (n=309) | SME FinTech adoption (TAM) |
| Xie and Hu (2024) | Global | Literature review | Open banking |
| Mohammed et al. (2024) | 71 countries | Ordinal logit model | CBDC adoption determinants |
| Nguyen Quoc et al. (2024) | 52 countries | Threshold & Bayesian regression | Digital inclusion & financial crises |
| Chand et al. (2025) | Fiji | Fixed-effects/GMM panel | FinTech, bank risk & profitability |
| Wu et al. (2024) | China | Difference-in-differences | FinTech regulation & bank risk |
| Lee et al. (2024) | Global | Topic-modelling review | Generative AI in finance |
| Abdullah et al. (2024) | Global (446 studies) | Bibliometric review | Blockchain supply chain finance |

## 3. Evolution of FinTech and Theoretical Perspectives

### 3.1 Evolution of Financial Technology

This can be divided into pre-quarter fintech (use of digital banking or even ATM's, internet banking, early e-payments era, early 2008 and subsequent era of fintech start-ups causing disruption to banking systems) to later on (mobile banking and APIs as enablers to fintechs in Banking platforms, post 2015 era to today as blockwechs, AI, embedded finance and now green finance, become a feature of Fintech) (Vijayagopal et al.,

2024). None of these eras had only new tools; they had to impact the value of the product, with the latest stages in each era reducing the time frame between invention and commercialisation of the new tools, directly relevant to how fast banks need to catch up today on the new tools that are being considered.

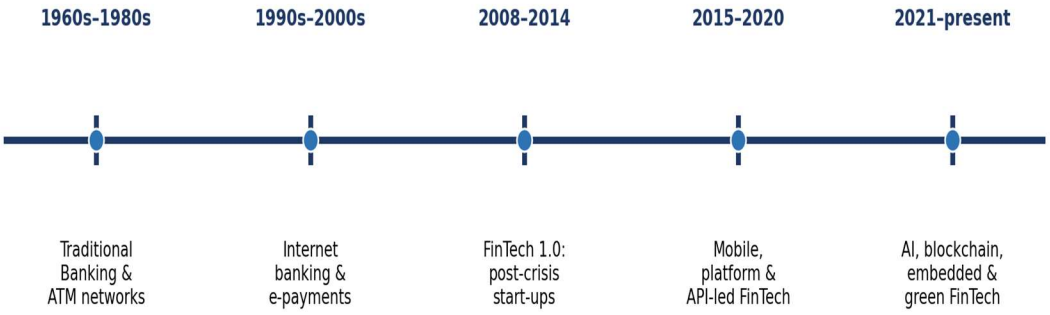


*Figure 1: Evolution of FinTech Timeline*

**3.2 Drivers of FinTech Growth**

The smartphone penetration, negative pricing attributes for Cloud computing, open API necessity regulations (e.g. open banking regulations) and regulations becoming more open in the aftermath of the crisis to non-bank regulators (Xie and Hu, 2024; Vijayagopal et al., 2024). Reasons for using and adopting algorithmic decision-making models could be unmet needs of 'unbanked populations' (Osabutey and Jackson, 2024) or a deficiency in the model that offers 'SMEs' all the desired characteristics (Krah et al., 2024). The ease of access to $VC$ and the reduction of the marginal cost to deploy the algorithmic decision making process at scale, from the supplier's perspective, influences and grows the use and adoption of algorithms.

**3.3 Relevant Theories**

The three following and recurring (chronic) theories have been derived from literature. If the explanation for adoption is through POU as done in the Technology Acceptance Model (TAM), then the POU model has been tested with Ghanaian SMEs and results of the empirical test shows that POU has been found to be the most significant factor for eleven out of 13 postulated relationships of TAM (Krah et al., 2024). The Diffusion of Innovation (DOI) theory explains how some firms are more successful than others in value creation, making their digital infrastructure, human capital and governance more advantageous to benefit from the adoption of FinTech; and, more observable in commercial outcomes that are later discussed in this review, as evidenced by the spread of mobile money across Sub-Saharan Africa (Osabutey and Jackson, 2024; Voptia and Stukalina, 2024). There is also a corollary extension; the UTAUT2 where the author Amnas et al. (2024) add a new set of antecedents; trust and perceived security when writing about FinTech and financial inclusion in the context of an Indian context, that of Stefanidis.

**3.4 Conceptual Framework**

Theories are then combined in Figure 3, suggesting firm capability RBV does not necessarily result in commercial or risk outcomes but these may be partly moderated by the determinants of adoption (trust, usefulness, literacy and regulatory support) or by both those sets (verhent: firm capability RBV does not necessarily lead to commercial or risk outcomes; it may be partly moderated by both or either set of determinants of adoption: trust, usefulness, literacy and regulatory support).

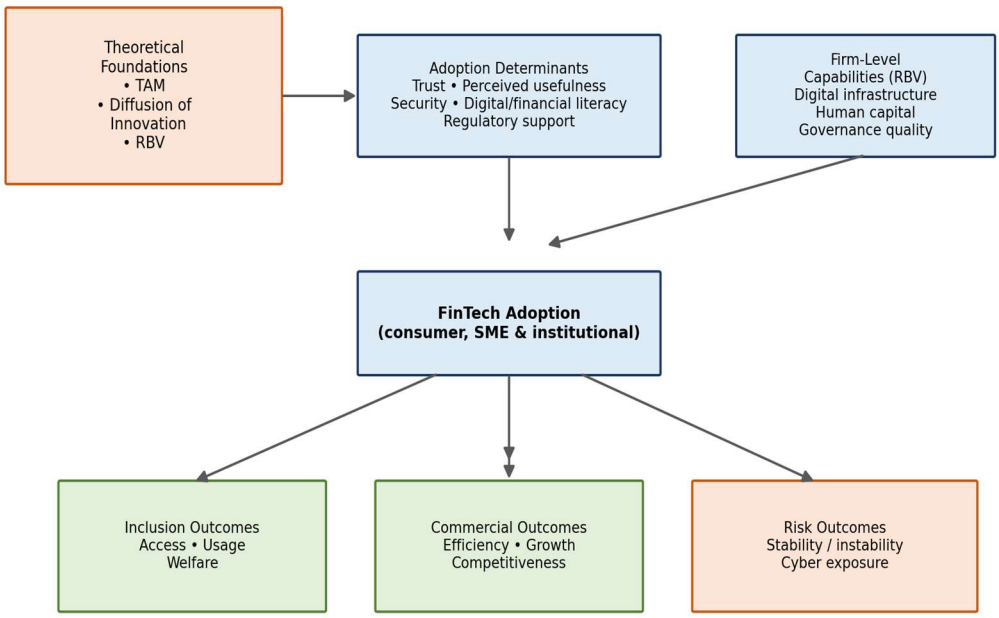


*Figure 3: Conceptual Framework of FinTech Adoption and Outcomes*

## 4. Critical Review of Major FinTech Technologies

### 4.1 Digital Payments

The cost of making and settling a transaction, and the time required to keep the books and records of such transactions are lower through digital payments, which can be accessed through mobile payment and the use of digital wallets and the instant payment rails; Digital payments are the most developed FinTech application in emerging markets (EM) (Osabutey and Jackson, 2024). However, their advantages are on several sides: they can be provided to all types of smart phones, the connection with which will enable making money without investing in a costly P.O.S. system; they just have some disadvantages on the other side: When an agent wants to use them, he has to invest in connectivity and build an agent network, eliminating the most distant users, they are different from an expensive P.O.S. system (Voptia and Stukalina, 2024). The comparisons of the studies are then presented: stakeholder equity (rather than adoption and issues of equitable benefits) is emphasised in the case of the studies presented here, whereas Krah et al. (2024) focus on usefulness on the level of the firms (also reference to stakeholder equity and usefulness, but without coming to the trap of adoption and equitable benefits issues). Agent-network constraints and affordability constraints are discussed in the following literature that are represented in platforms such as M-Pesa in East Africa that depend on the technology of the agent -- sometimes they may be too poor to afford.

### 4.2 Mobile Banking

Mobile banking is about more than just being able to pay your bills with your cell phone; it's being able to manage your savings, access credit and insurance with your cell phone, and it's an entire banking channel, not a single application (Voptia and Stukalina 2024). Amongst the many advantages it has to offer with relatively low economic cost, in comparison to other potential physical means of distribution, is its ability to support digital literacy and language competence amongst other members of the rural sector, or the elderly. (Adel, 2024)

### 4.3 Blockchain

But Blockchain can offer solutions to both these problems: Fraud and trust on financial and trading markets, as the cryptographic security makes transactions on the blockchain more secure, which affects the dynamics of trade and the trust of market players (Basra, 2024). Specifically on SCF, Abdullah et al. (2024) find that the

capacity of blockchain to enhance the visibility and traceability of SMEs' supply chains is hampered by limited research in the Global North and the rollout of blockchain in the real-world is still not as extensive as hoped-for by academics. That's really good, but there are some problems: there's scalability, there's a limited amount of energy, there's uncertainty of interpretation and application in lots of jurisdictions, and there's regulation.

**4.4 Artificial Intelligence**

AI is used to build credit scoring models, build robo-advisors, automation of fraud and compliance and is the primary technology for the modern FinTech companies. Lee et al (2024) note another four applications from the present day that could have a transformative effect: finance-specific language models; generative adversarial networks; and regulations that are lagging in purchasing. Sun and Wu (2025) also argue that regional innovation and knowledge-capital can generate value, in addition to the prospect of adopting AI's operational business case, and FinTech's hold on the business world, not limited to just value in use, isn't without value, after all!

**4.5 Machine Learning**

Machine Learning, an arm of AI, allows for Robo-advisory profiling, predictive modelling in various areas such as credit, fraud and investment decisions. Given that investors fear using a "concealed" and "black-box" method, a method based on investors' "relative risk aversion" could be used, Gaspar and Oliveira (2024) recommend. On the point of ML analysis of SME data, Kumar et al. (2024) had applied a random-forest model that is proven to have prediction abilities, whereas it has not explained the causal relationship; however, it is a common challenge in all ML made application to analyze data of FinTech, which are able to predict, but are unable to explain or design the policy capacity.

**4.6 Big Data**

As mentioned in the literature this idea of literature is applicable in conjunction with the large scale bibliometric / content analysis methods also to the methods of behavioural credit-scoring, where additional data beyond traditional information – e.g. transaction history, mobile usage, etc. – are analysed. The good and the bad in the past, as discovered through studies, is not being embraced or accepted where it lands and nor is the risk that sits on this legacy that has the potential to shape customer behaviours and influence the effectiveness of the business.

**4.7 Cloud Computing**

On-premises infrastructure solutions, compared to cloud platforms, can usually be more costly because they will involve one-time installation expenses for automated methods to track and monitor compliance and risks using real-time information (Olaiya et al., 2024). This decreases the burden cost disadvantage, though not explicitly addressed in literature on compliance agenda (Olaiya et al., 2024;Cosma and Rimo,2024) as it is done in this paper is the systemic risk that occurs when there is dependency on limited cloud service providers.

**4.8 Open Banking**

Under open banking, the data needs to be made available in a way that the FinTechs can access it – in an API accessible format – meaning that it has to be made available in a way that banks could not. As a result, it can be seen to create competition and can even lead challengers to capture the benefits, or the data-rich banks, fairly or otherwise, Xie & Hu (2024) suggest.

**4.9 Embedded Finance**

Commercial-use open banking has turned out to be a form of embedded finance – a new financial service category that uses open banking APIs as the means for embedding financial services into other non-financial applications (Xie & Hu, 2024). It allows for the payment (or the insurance services or credit services) to be processed at the point of sale where the consumer may not be aware that they are being offered a payment service, insurance service or credit service, but the rapid growth of such services – combined with the comparatively less stringent requirements for the service provider to obtain these licenses – brings with it concerns about consumers being better protected in their interactions with and use of these services and concerns over data governance, as described in Section 6.

***Table 2: Comparison of Major FinTech Technologies***

| Technology | Key Advantage | Key Limitation | Illustrative Source |
|---|---|---|---|
| Digital Payments | Low-cost, high-reach transactions | Connectivity/agent-network dependence | Osabutey and Jackson (2024) |
| Mobile Banking | Extends full banking channel cheaply | Digital literacy & language barriers | Voptia and Stukalina (2024) |
| Blockchain | Transparency, immutability, disintermediation | Scalability & regulatory uncertainty | Basra (2024); Abdullah et al. (2024) |
| Artificial Intelligence | Automates credit, advisory & compliance | Governance/regulatory lag | Lee et al. (2024) |
| Machine Learning | Strong predictive power for profiling | Limited explainability/causal insight | Gaspar and Oliveira (2024) |
| Big Data | Granular, real-time behavioural insight | Risk of embedding historical bias | Ha, Le and Nguyen (2025) |
| Cloud Computing | Scalable, low fixed-cost infrastructure | Systemic dependence on few providers | Olaiya et al. (2024) |
| Open Banking | Fosters competition & customised credit | Equity depends on institutional design | Xie and Hu (2024) |
| Embedded Finance | Seamless point-of-need access | Weak consumer protection & oversight | Xie and Hu (2024) |

## 5. Critical Analysis of FinTech's Impact on Business and Commerce

### 5.1 Business Efficiency

The reduction, both significant and consistent, is found in the case of FinTech (Xie and Hu, 2024; Osabutey and Jackson, 2024) taking into account the transaction costs and the processing time. At least, in the small and well-supervised banking system of Fiji, development of FinTech for the banking system does not increase risk-taking, but it can increase banking sector profitability as shown by this work by Chand et al. (2025) on efficiency and stability can go hand in hand. Yet, not all firms may reap the advantages of SLB RegTech benefits: while larger firms might benefit from more aspects of RegTech benefits, there is currently no reference to a balance between these efficiencies and inequities at the firm-level directly related to policy (Olaiya et al., 2024).

### 5.2 Customer Experience

One route towards customisation and minimisation of any friction points with digital platforms but there is no clear point to the customer journey. However, not every single of these factors proved to be equally significant – whereas trust and security seem to be important, ease of use and social influence was also identified as important among younger users, but not among all the users, thus highlighting the value of approachable customer experience design and segment-specific approach for FinTech companies (Amnas et al. 2024, Selvam and Parayitam 2024).

### 5.3 Financial Inclusion

The world of FinTech has been well-documented by the commercial and social innovations, particularly with regards to financial inclusion. For the long run, the authors Ha. et al (2025) revisited their review of 96 studies and determine what they regard to be likely observations (the general trend of discovery of a novel-service, the tolerance of the market and the role of involved stakeholders) and found only little evidence regarding welfare effects with respect to the long run. Osabutey and Jackson (2024), however, agree that the poor citizens of the

community enjoy the least benefits of 'mobile-money related inclusion' as compared to any richer 'elite' elements of the community and/or commercial/commercialistic interests (Adel, 2024).

**5.4 SME Development**

The FinTech's influence on boosting the payments access for SMEs and access to credit, as well as on the supply-chain financing (SCF), is apparent (Krah et al., 2024; Abdullah et al., 2024). However, as Kumar et al. (2024) pointed out in their remarks, financial literacy and digitalisation can help drive sustainable economic growth for this growing portion of the BRICS economy, but does not need to be a standalone business strategy for Fintech companies – other investments in human capital must go hand-in-hand with market rollout plans and financial-literacy support.

**5.5 Risk Management**

There is a huge set of conflicting evidence on FinTech and risk. Although the banking risks due to weak deposit franchises are higher in large economy contrast China as compared to small economy contrast Fiji, both of the above mentioned studies conclude that banking risks weaken on implementation of FinTech regulations and adoption, resulting in strengthened deposit franchises and higher profitability of banking institutions.

**5.6 Fraud Detection**

Compliance is now powered with AI and ML, and RegTech has automated the compliance monitoring process to identify compliance issues – tasks traditionally performed manually, and provided technology support to help reduce reporting time lag (Olaiya et al., 2024).

**5.7 E-commerce**

Moreover, the nature of the representation itself differs to a great extent and even has various priorities for studies in North America/Europe on e-commerce and development, embedded finance and digital payments as well as blockchain supply chain finance and the representation of the entities of the Global South in ecommerce supply chain.

**5.8 Cross-border Payments**

The findings from the CBDC research suggest that, apart from technology, monetary sovereignty is a vital factor in determining a nation's innovation in cross-border payments, as CBDC ranging initiatives are higher in countries with high monetary sanctions danger and nations who are offshorising loans ( Mohammed et al., 2024). CBDC ranging programs are consequently not just technology focused, but also should consider geopolitical risk and policy changes.

**5.9 Digital Transformation**

Financial incentive of digital transformation (DT) via FinTech is thus far to be viewed as a phenomenon rather than one off: "The green effect of FinTech is also the carbon/ESG effect with high incentive and good governance of FinTech firms, thus providing the actionable guidance on how to prioritize investments in digital transformation (DT)" (Zhuang and Wu, 2025; Sun and Wu, 2025).

***Table 3: Benefits versus Challenges of FinTech***

| Benefits of FinTech | Challenges of FinTech |
|---|---|
| Lower transaction costs and faster settlement | Uneven cybersecurity capability across firm sizes |
| Expanded financial inclusion for unbanked populations | Benefits concentrated among better-resourced users |
| Improved SME access to credit and supply-chain finance | Persistent digital and financial literacy gaps |
| Enhanced fraud detection and compliance automation | Widening compliance-cost gap between large and small firms |
| Greater customer personalisation and convenience | Data-privacy trade-offs in open banking and embedded finance |

| Benefits of FinTech | Challenges of FinTech |
|---|---|
| Support for ESG and green-finance outcomes | Weak, fragmented cross-jurisdictional regulatory frameworks |
| Reduced bank risk-taking in some contexts | Increased crisis risk in developed markets absent safeguards |

**6. Challenges and Ethical Issues**

**6.1 Cybersecurity**

A new trend in governance space (and costliness) for smaller institutions – in the increasingly complicated Resourcing the Hybrid, Human-Algorithmic model of compliance, the larger and more well capitalized institutions have more fingers on the pulse in terms of transaction volume, and human supervision is being added to the screen of algorithmic compliance as the market develops.

**6.2 Data Privacy**

Open banking and embedded finance demand the sharing of much data - there is a need to accommodate personalisation in a convenient and efficient way but having a consumer's privacy protected – balance this, but there are very few articles in the literature which aim to create standards for privacy and testability at design level for a FinTech platform (though this is accepted, balance it, not well developed at a theoretical level).

**6.3 Regulatory Compliance**

As with RegTech solutions, there may be an inefficiency in the costs associated with implementation, between larger entities and smaller entities, getting priced out due to costlier engagement models as the entities implement (Olaiya et al., 2024), and/or variations across different industry sectors in how to balance the speed of innovation with consumer protection, as we see in the United States, UK and India (Vijayagopal et al., 2024).

**6.4 Consumer Trust**

The extent of skewed distribution in trust leads to adoption (Amnas et al., 2024); the users are more uncertain about trust, affects the commercialization of FinTech products/service, and subsequently affects the market size expansion (Vijayagopal et al., 2024).

**6.5 Ethical Use of AI**

One such unaddressed risk uncovered by Lee et al (2024) involves the lack of direction for financial institutions in governance of the use of generative-AI, including how to consider the explainability, bias and accountability of generative-AI and impacts on financial outcomes.

**6.6 Digital Inequality**

The benefits of FinTech introduce biases and reinforcing dynamics of digital inequality towards already well-resourced users and regions, and both Adel (2024) and Osabutey and Jackson (2024) highlight FinTech as a side effect of digital inequality and reiterate that FinTech diffusion is a structural phenomenon that stakeholders should work to change.

**7. Research Gaps and Future Research Directions**

**7.1 Limitations of Existing Research**

The reviewed evidence shows one heck of a difference; a majority focus on cross-sectional survey-based review of evidence (Amnas et al, 2024; Sun and Wu, 2025; Chand et al, 2025), with variations in this approach across the different countries in the sample - specifically in India and China, where the dominant theme is the short-term temporal focus of banking risk-taking, and in specific economies of Africa and Pacific where the focus is on the short-term temporal dimension of banking risk-taking (Amnas et al., 2024; Sun and Wu, 2025; Chand et al., 2025). While there's a number of multi-country studies available (Adel, 2024; Mohammed et al., 2024), these are based on macro indicators and do not take into account any differences at the firm/consumer level.

**7.2 Emerging Trends**

Besides these topics for which evidence of causal impact is still to be found at the firm level, such as mobile money and financial inclusion, there are others topics such as Decentralised Finance (DeFi), Central Bank

Digital Currencies (CBDCs) (Mohammed et al., 2024; De-Pablos-Heredero and Montes Botella, 2024), Green FinTech (Zhuang and Wu, 2025; Sun and Wu, 2025), Explainable AI (Lee et al., 2024), and RegTech (Olaiya et al., 2024), which are emerging topics but thus far the evidence contains gaps that must be populated with evidence of causation.

**7.3 Future Research Opportunities**

Further studies should include deeper analyses at empirical case (market participant and/or consumer) and/or regulatory jurisdictional level for some vulnerable case groups which are underrepresented in the existing research on FinTech and more explicitly and rigorously conduct distributional and equity analysis in addition to the other commonly used aggregate measures of adoption (Lye et al., 2025).

***Table 4: Research Gaps and Future Directions***

| Research Gap | Future Research Direction |
|---|---|
| Geographic skew toward India, China and select African/Pacific economies | Comparative multi-region studies covering under-represented markets |
| Dominance of cross-sectional and bibliometric research designs | Longitudinal, causally identified firm- and consumer-level studies |
| Limited evidence on DeFi and CBDC commercial effects | Empirical studies of DeFi/CBDC adoption and business impact |
| Underdeveloped Explainable AI research in finance | Studies testing explainability, bias and accountability frameworks |
| Fragmented RegTech evidence across firm size | Research on inclusive, scalable RegTech for smaller institutions |
| Aggregate rather than distributional inclusion metrics | Studies disaggregating outcomes for vulnerable groups |

**8. Conclusion**

It is evident, from the analysis of this review, that the payments, banking, insurance and SME financing landscape as well as cross-border trading is evolving as FinTech has become an important player in the changed scenario. This first set of evidence gathering centered on evidence collected from 25 peer reviewed case studies, which were in fact pretty consistent with Mitchel et al (2016) where Financial Inclusion is found to require adherence to Financial Technology – and financial technology and the ability to create digital literacy and adapt to new laws and regulations. Apart from deployment, there are other complementary human and institutional skills that will be developed through the emergence of 9 key technologies that have commercial application: digital payment, mobile banking, blockchain, AI/Machine Learning, big data, cloud computing, open banking and embedded finance.

It was innovative to synthesize very disjointed and few pieces of evidence to build a coherent structure, ensuring a relationship between technology, adoption and commercial outcome; identifying gaps and deficiencies in the literature, including the focus on spreading the optimism but ignoring the empirical evidence, and the focus on the inclusion, risk and equity aspects. It's not only the technology that makes the difference in gaining competitive advantage – compliant infrastructure and inclusive reach and trust are also crucial. Indeed, the continued evolution of the literature around the notions of 'innovation-regulation distance', CBDC registration and approval process, and on open banking has clearly exposed the need to adapt the regulation, and harmonise it across jurisdictions – not one size fits all.

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