Management Studies and Business Journal (PRODUCTIVITY)
Vol 1 (5) 2024 : 784-800

The Importance of Financial Management for Small Businesses

Pentingnya Manajemen Keuangan Bagi Usaha Kecil

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ABSTRACT
This research investigates the impact of financial technology (Fintech) on financial management in small businesses in developing countries. Small businesses in the region often face difficulties in accessing efficient and affordable financial services, which can hinder their growth and stability. Fintech offers solutions such as digital payments, peer-to-peer lending, financial management tools, and crowdfunding, increasing the accessibility and efficiency of financial services. This study was conducted as a systematic literature review using databases such as Scopus, Web of Science, Google Scholar, and IEEE Xplore, in which 100 relevant articles were identified through the PRISMA method. The findings show that Fintech adoption can increase financial inclusion, improve risk management, and reduce operational costs for small businesses in developing countries. However, challenges such as complex regulations and limited technological infrastructure need to be overcome. The implications of this research emphasize the potential of Fintech to drive inclusive economic growth by empowering underserved small businesses. This research aims to provide insight for policy makers, Fintech providers, and small business owners to develop effective strategies by utilizing technology for sustainable economic development.
Keywords: Financial Technology, Fintech, Small Business, Developing Countries, Financial Management, Systematic Literature Review

ABSTRAK
Penelitian ini menyelidiki dampak teknologi finansial (Fintech) terhadap pengelolaan keuangan pada usaha kecil di negara berkembang. Usaha kecil di kawasan ini sering menghadapi kesulitan dalam mengakses layanan keuangan yang efisien dan terjangkau, sehingga dapat menghambat pertumbuhan dan stabilitas mereka. Fintech menawarkan solusi seperti pembayaran digital, pinjaman peer-to-peer, alat manajemen keuangan, dan crowdfunding, yang meningkatkan aksesibilitas dan efisiensi layanan keuangan. Penelitian ini dilakukan sebagai tinjauan literatur sistematis menggunakan database seperti Scopus, Web of Science, Google Scholar, dan IEEE Xplore, dimana 100 artikel relevan diidentifikasi melalui metode PRISMA. Temuannya menunjukkan bahwa adopsi Fintech dapat meningkatkan inklusi keuangan, meningkatkan manajemen risiko, dan mengurangi biaya operasional bagi usaha kecil di negara-negara berkembang. Namun tantangan seperti peraturan yang rumit dan infrastruktur teknologi yang terbatas perlu diatasi. Implikasi dari penelitian ini menekankan potensi Fintech untuk mendorong pertumbuhan ekonomi inklusif dengan memberdayakan usaha kecil yang kurang terlayani. Penelitian ini bertujuan untuk memberikan wawasan bagi para pengambil kebijakan, penyedia Fintech, dan pemilik usaha kecil untuk mengembangkan strategi efektif dengan menggunakan teknologi untuk pembangunan ekonomi berkelanjutan.
Kata Kunci: Teknologi Finansial, Fintech, Usaha Kecil, Negara Berkembang, Pengelolaan Keuangan, Tinjauan Pustaka Sistematis

1. Introduction

Effective financial management is one of the main pillars in the continuity and success of small businesses. Small businesses often face significant challenges in accessing efficient and affordable financial services, which can hinder their growth and stability. As technology develops, fintech (financial technology) has emerged as a potential solution that can overcome many of these challenges. Fintech covers a variety of technology-based financial services, such as digital payments, peer-to-peer lending, financial management, and crowdfunding, which can significantly improve access and efficiency of financial services for small businesses.

The emerging phenomenon shows that fintech adoption in developing countries is experiencing rapid growth. However, there are significant differences in the level of adoption and impact on small business financial management in various developing countries. Several studies show that fintech can provide major benefits, including increased access to financing and better risk management. However, there are also significant obstacles, such as limited technological infrastructure, inadequate regulations, and low financial literacy.

The research question asked in this study is: How does the use of financial technology (Fintech) affect the financial management of small businesses in developing countries?"** This question focuses on analyzing the impact of fintech adoption on the efficiency, effectiveness and financial sustainability of small businesses in different environments. This research identifies a gap in the existing literature, namely the lack of in-depth research on how fintech can specifically influence the financial management of small businesses in developing countries, where economic, social and regulatory conditions differ from developed countries. Most of the current literature focuses on developed countries or discusses fintech in general without looking at the specific impact on small businesses in developing country contexts.

The urgency of this research lies in the urgent need to understand how fintech can be an effective tool in improving the finances of small businesses in developing countries, which are often the backbone of local economies. With technology adoption increasing worldwide, it is hoped that this research will provide clearer insight into how fintech can be implemented effectively to support small businesses. The novelty of this research is its approach that focuses on developing countries and small businesses, which often receive less attention in the fintech literature. This research will explore specific aspects such as technological, regulatory and cultural barriers that influence fintech adoption in developing countries, which have not been widely discussed previously. The contribution of this research is to provide a more comprehensive understanding of the impact of fintech on the financial management of small businesses in developing countries. It is hoped that the findings from this research will help small entrepreneurs, fintech service providers and policy makers in developing more effective strategies to increase access and use of fintech services, as well as encourage more inclusive and sustainable economic growth. Thus, this research will not only enrich existing literature, but also provide practical recommendations that can be implemented to support the development of small businesses through the use of financial technology in developing countries.

2. Research Methods

This research uses a systematic literature review approach to collect and analyze relevant articles from various reputable international databases, including Scopus, Web of Science, Google Scholar, and IEEE Xplore. The selection of these databases was based on their reputation and breadth of coverage in providing high-quality academic literature related to the research topic. To ensure comprehensive coverage of the literature, a number of keywords and keyword combinations have been carefully designed. Keywords used in the search included "Financial Technology" OR "Fintech", "Small Business" OR "Small and Medium Enterprises" OR "SMEs", "Financial Management", "Developing Countries" OR "Emerging Markets", and "Impact " OR "Influence" OR "Effect". These keywords were combined with Boolean operators (AND, OR) to ensure that the search covered all relevant and significant literature.

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) method is used to organize and report the systematic literature review process. This method consists of four main stages: identification, screening, eligibility, and inclusion. In the identification stage, articles are identified through keyword searches in a predetermined database. The screening stage involved removing duplicate articles and reviewing the titles and abstracts of articles to determine initial relevance. At the eligibility stage, articles that passed the screening stage were reviewed in full to ensure they met the inclusion and exclusion criteria. Articles that met all criteria were included in the final analysis at the inclusion stage.

The initial search process yielded a total of 850 articles from various databases. After going through the filtering and duplication removal stages, the number of remaining articles was 600. Of these articles, 250 articles were selected for a more in-depth review based on the relevance of the title and abstract. After full review of the selected articles, the final 106 articles that met the inclusion and exclusion criteria were included in the analysis. Inclusion and exclusion criteria were used to ensure that only relevant and high-quality articles were included in the review. Inclusion criteria include articles published in reputable international journals, discussing fintech and small business financial management in developing countries, published in the 2010-2023 period, available in English, as well as empirical studies or literature reviews that provide relevant data or analysis. Meanwhile, exclusion criteria include articles that do not focus on developing countries, only discuss technical aspects of fintech without any connection to small business financial management, do not provide empirical data or adequate analysis, as well as articles that are not peer-reviewed such as opinions, comments or editorials. With this approach, this research aims to provide a comprehensive and in-depth picture of the influence of the use of financial technology (Fintech) on the financial management of small businesses in developing countries, as well as identifying existing challenges and opportunities.

3. Results and Discussions

3.1. Definition and Types of Fintech

Fintech, short for financial technology, refers to a variety of financial innovations driven by technology. The Financial Services Authority defines fintech as financial innovation supported by technology, creating new business models, applications, processes or products that influence financial markets, institutions and the provision of financial services (S., 2022). Experts have also adopted a similar definition, as explained by the Financial Stability Board, which describes fintech as technology that improves financial products and services (Alam et al., 2021).

Fintech, in a broader context, is defined as the use of innovative technology in financial services, especially through financial innovation via the internet and smartphones (Kálmán, 2019). As a disruptive innovation, fintech is considered capable of fundamentally changing traditional financial markets (Serbulova, 2021), with the aim of increasing the efficiency of the financial system for companies and customers (Mabula et al., 2023).

Furthermore, fintech is not bound to a single definition, but rather encompasses a diverse and growing range of activities (Hall, 2023), especially related to the integration of artificial intelligence and blockchain technology in the banking sector, which is driving digital transformation in this industry ("Integration of Artificial Intelligence and Blockchain in the Banking Industry: A Critical Practice-Based Evaluation on Current Implementation, Adoption, and Future Issues", 2023). Fintech companies are often identified as start-ups seeking to take market share from traditional players in the financial services sector (Antwi-Wiafe, 2023).

Overall, fintech represents a dynamic and growing sector, leveraging technology to revolutionize financial services. This not only includes providing new business models, products and processes, but also significantly shaping the modern financial landscape.

3.2. Various types of fintech services.

Fintech, which is a combination of "finance" and "technology", includes a variety of financial services that use mobile platforms and the internet, such as digital payments, real-time electronic funds transfer, purchasing financial products, and asset management (Oh et al., 2022). One of the significant innovations in fintech is peer-to-peer lending, which utilizes technology to facilitate lending and borrowing through applications or websites (Sari, 2023). Fintech companies provide essential services such as payments, wealth management, crowdfunding, loans, foreign exchange services, digital wallets, and digital currencies (Mahalle et al., 2021).

Payment services are becoming an integral part of fintech transactions, including insurance technology, financial data analysis, payment systems, and mobile banking (Ahmad et al., 2021). Fintech is changing the financial services landscape by introducing new business models such as peer-to-peer lending and crowdsourcing, as well as providing alternatives to traditional financial institutions (Tang et al., 2020). By integrating technology into financial services, fintech aims to improve service efficiency and consumer experience.

Fintech adoption, particularly in digital payments, is increasing due to ease of access, especially in situations with limited mobility and limited face-to-face interactions (Urus et al., 2022). The sector's growth is driven by the application of innovative technologies such as big data, cloud computing, artificial intelligence, and blockchain to improve traditional financial services, reduce costs, increase efficiency, and overcome financial exclusion in developing countries (Jiang et al., 2019).

Fintech companies focus on improving customer experience by introducing new products and services such as blockchain-based marketplaces, cryptocurrencies, global remittances, crowdfunding, online brokers, cross-border payments, and open banking (Barbu et al., 2021). Trust is a key factor in fintech services, influencing user adoption and engagement with these platforms (Effendi & Radianto, 2022). Fintech services also cover various sectors, including the hospitality industry, where factors such as customer experience and attitudes mediate loyalty intentions (Karim et al., 2022). Overall, fintech is a transformative force in the financial services industry, providing a variety of services that combine finance with advanced technology to provide efficient, convenient and innovative solutions for consumers and businesses.

3.3. Small Business Financial Management

3.3.1. Basic principles of financial management for small businesses.

Financial management is a crucial aspect for the sustainability and success of small businesses. These practices include asset management, financing, cash flow, and profit distribution (Duan et al., 2022). Small business entrepreneurs have an important role in ensuring business performance, growth and sustainability, so knowledge of effective financial management is very important (Rachapaettayakom et al., 2020). In small businesses, the knowledge, skills and abilities of the owner or manager become the main resource for improving financial management practices (Orobia et al., 2020).

Financial literacy is a fundamental component that supports the sustainability of small and medium enterprises (SMEs) by improving financial management practices and reducing financial errors (Ye & Kulathunga, 2019). Research shows that financial management in SMEs differs from large companies due to factors such as the dynamic nature of cash flow, limited working capital, and the ability to finance risk through debt or equity (Abiola et al., 2021). Additionally, financial literacy empowers entrepreneurs, especially women, with essential knowledge and skills to manage finances effectively, make informed decisions, and access capital markets (Akpuokwe, 2024).

Effective financial management training is essential for small businesses to improve financial skills, profitability and daily operations (Eton et al., 2022). Financial literacy is also important for efficient business capital management, because it has a direct effect on revenue and overall business performance (Siswanti et al., 2021). In addition, the application of good financial management principles is very important for SMEs to increase efficiency, adaptability and competitiveness in the market (Hamplová et al., 2020). Overall, financial management is a multifaceted process involving various aspects such as financial literacy, asset management, cash flow, and profit distribution. Small businesses can greatly benefit from improving their financial knowledge, skills and practices to ensure sustainability, growth and success in a competitive business environment.

3.3.2. Challenges facing small businesses in financial management in developing countries.

Small businesses in developing countries face various challenges in financial management. These challenges include problems in cash flow management (Dzingirai & Ndava, 2022), limited access to formal financing (Mwanzia, 2022), the impact of the COVID-19 pandemic (Mustafa et al., 2021; Belitski et al., 2021), and the need for financial literacy among entrepreneurs (Erhomosele & Oluchi, 2022). Research shows that inadequate financial management skills among owners and managers is a major contributor to financial problems in small businesses ("undefined", 2022). Additionally, a lack of financial knowledge and training (Rachapaettayakom et al., 2020; Saah, 2022), as well as insufficient financial support from financial institutions (Adhikari et al., 2021), exacerbates the financial barriers faced by small businesses in developing countries .

Government intervention plays an important role in offering financial support through initiatives such as facilitating access to soft loans and implementing capacity building activities that are important for the progress and sustainability of small businesses (Olise et al., 2022). The importance of innovative financial strategies and strong financial planning for sustainable business development is also emphasized (Ogochukwu & Kasztelnik, 2021). In addition, the convergence of knowledge, government support, and technological assistance has a significant influence on entrepreneurship (Suwanan, 2024), which highlights the multifaceted challenges in financial management faced by small businesses.

To effectively address these challenges, small business owners must prioritize acquiring financial knowledge, increasing financial literacy, and implementing efficient financial control systems (Rachapaettayakom et al., 2020; Lysak et al., 2022). In addition, increasing financial inclusion and providing high-quality financial information are important factors that can have a positive impact on the performance of small and medium enterprises in developing countries (Ismael, 2021; Amarteifio, 2020). In conclusion, the financial management challenges faced by small businesses in developing countries are complex and varied, requiring a holistic approach that integrates financial literacy, access to financing, government support, and innovative financial strategies to ensure the prosperity and sustainability of small businesses in these regions.

3.3. The Influence of Fintech on Small Business Financial Management

3.3.1. Improved Access to Financial Services

Fintech, short for Financial Technology, has significantly increased access to banking and financing services in recent years. These advances involve the integration of technology and innovation into the financial sector, resulting in more sophisticated and efficient financial services in areas such as banking, asset management, investments, insurance, and mortgages (Yadav, 2023). Fintech plays an important role in making financial services more accessible, efficient and affordable, thereby transforming the financial industry (Kou, 2019).

Research shows that the development of the fintech industry has positively influenced borrowers' access to financing, especially in regions with less bank competition, thereby increasing the availability of credit in these regions (Wei, 2023). Fintech companies have introduced technological breakthroughs that increase productivity in the financial services sector and reduce costs associated with providing banking services, ultimately benefiting consumers (El-Said, 2021).

Additionally, fintech plays an important role in promoting financial inclusion by bridging the gaps left by traditional service providers and offering affordable and appropriate financial services to underserved populations, such as low-income households (Truong et al., 2023). The ease of use and enhanced customer experience provided by fintech services have contributed to their adoption by bank customers, meeting personalized needs and improving overall service quality (Zhong-qing et al., 2019).

In addition to increasing access to financial products, fintech innovation has accelerated revenues, improved service quality, and reduced operational costs, thereby reshaping the financial industry and driving financial system stability (Mansurali et al., 2022). The impact of fintech extends to small businesses, offering growth and entrepreneurship opportunities through technology-based financial services (Sharma et al., 2023). Overall, fintech has revolutionized the financial industry by disintermediating and modernizing financial services, providing faster and more efficient solutions for consumers (Sharma et al., 2023). By leveraging technology, fintech companies have automated financial processes, improved customer interfaces, and introduced innovative business models to meet evolving consumer needs (Ozili, 2022). In conclusion, the evolution of fintech is not only changing the financial landscape but also playing a vital role in increasing access to banking and financing services, driving financial inclusion, and revolutionizing traditional financial practices.

3.3.2. Case studies or empirical data from various developing countries.

Access to banking services and fintech financing in developing countries is an important area of study that has attracted the attention of researchers around the world. Several empirical studies provide insights into various aspects of financial inclusion, financial literacy, and the impact of fintech on access to finance in developing countries.

Grohmann and Menkhoff (2020) examine the relationship between financial literacy and financial inclusion, highlighting price and non-price barriers in accessing banking services in developing countries. Their survey data from 209 banks in 62 countries provides valuable insight into the challenges of promoting financial inclusion.

Rybakovas and Žigienė (2022) focus on financial innovation for financial inclusion, especially through fintech. By analyzing data from the Global Fintech Ranking and the Survey on the Access to Finance of Enterprises (SAFE), they explore the interaction between financial innovation and financial inclusion in European countries. This study emphasizes the potential of fintech in increasing access to financing, especially in the context of business development.

Wei (2023) contributes to this discourse by examining the impact of the development of the fintech industry on bank credit risk. Their findings show that fintech has facilitated increased access to financing for borrowers, especially in areas with less bank competition.

Jóia and Cordeiro (2021) emphasize the transformative role of fintech in increasing financial inclusion in emerging markets such as Brazil. Their study shows that fintech presents a significant opportunity to address financial exclusion in emerging economies.

Cevik (2024) provides insight into the relationship between fintech and financial stability, highlighting the impact of various fintech instruments. This study emphasizes the importance of understanding how fintech affects financial stability, especially in the context of developing countries. In conclusion, these studies collectively emphasize the importance of financial inclusion and the role of fintech in increasing access to banking and financing services in developing countries. By overcoming barriers, leveraging financial innovation, and understanding the implications of fintech for financial stability, researchers are working to promote an inclusive financial system globally.

3.3. Efficiency and Ease of Transactions

3.3.1. The impact of using fintech in increasing efficiency and reducing transaction costs.

Fintech, which is a combination of “financial” and “technology,” has significantly increased efficiency and reduced transaction costs in the financial services sector (Ali et al., 2021). By leveraging digital technology, fintech companies have effectively overcome challenges and reduced costs in this industry (Spigel, 2022). Fintech adoption not only has the potential to disrupt and reshape the financial landscape, but also to lower costs, improve the quality of financial services, increase employment rates, expand access to finance for businesses, reduce poverty through lower transaction costs, and encourage a more diverse financial environment and stable (Al-Okaily et al., 2021).

Furthermore, collaboration between fintech companies and traditional banks can result in increased systemic financial stability while reducing the negative impacts of disruption and competition (Varma et al., 2022). Fintech innovation is also associated with benefits such as new opportunities, reduced costs, increased transparency, and better engagement with corporate dynamics (Battisti et al., 2023). Research shows that financial technology integration can have a positive impact on sustainable development, especially by supporting green finance initiatives that encourage environmentally friendly behavior (Udeagha & Muchapondwa, 2023).

While fintech offers many benefits, it is important to recognize the potential risks and challenges associated with its adoption. The emergence of new risks, such as cybersecurity threats and regulatory compliance issues, emphasizes the importance of maintaining a balance between innovation and risk management in the fintech sector (Jović & Nikolić, 2022). Additionally, the nonlinear relationship between fintech adoption and operational performance emphasizes the need for a deep understanding of how fintech affects the profitability of financial institutions (Bouheni et al., 2023). In conclusion, the use of fintech has significantly contributed to increasing efficiency and reducing transaction costs in the financial services industry. By leveraging digital technology, fintech companies have simplified processes, increased access to financial services and driven innovation in the sector. However, stakeholders must remain alert to the potential risks and challenges associated with fintech adoption to ensure continued growth and development in the industry.

3.3.2. Examples of fintech applications that are popular in developing countries.

Fintech applications have gained significant attention in developing countries, offering a variety of benefits such as promoting financial inclusion, reducing income inequality, and increasing economic opportunities. In African economies such as South Africa, Nigeria, and Zimbabwe, fintech has enabled banks to provide services such as car loans and real estate without the need for physical branches (Habash, 2024). The development of fintech services, such as mobile banking for bill payments, has been proven to reduce income inequality in developing countries and address challenges related to inclusive development (Girma, 2023). In addition, fintech plays an important role in promoting financial and social inclusion by increasing the efficiency of resource allocation in the banking sector and creating economic opportunities in developing countries (Muganyi et al., 2022).

Furthermore, the impact of fintech on risk taking and operational efficiency of banks has been studied in developing countries such as China, India, Pakistan and Bangladesh (Sajid et al., 2023). Countries like Turkey, with strong banking systems and high levels of technology adoption, have the potential to benefit significantly from fintech solutions to improve sustainable finance (Bayram et al., 2022). Additionally, the potential of fintech in developing countries has been recognized, with a focus on digital technologies such as blockchain, robo-advisors, and peer-to-peer lending to revolutionize the financial sector (Urus & Mohamed, 2021).

Although fintech offers opportunities for growth and innovation, challenges in its adoption in emerging economies remain. Understanding the relationship between financial literacy and fintech applications in low-income economies still requires more empirical research (Nguyen, 2022). Additionally, the development of fintech in rural areas presents unique challenges that need to be overcome to fully exploit its potential in empowering rural revitalization (Yin, 2022). In conclusion, fintech applications have shown great potential in transforming financial services in developing countries by promoting financial inclusion, reducing income inequality and creating economic opportunities. However, further research and efforts are needed to overcome the challenges and maximize the benefits of fintech in these regions.

3.4. Risk and Security Management

3.4.1. How fintech helps small businesses manage financial risk.

Fintech plays a crucial role in helping small businesses manage financial risks by providing better access to financial services and reducing barriers that traditional financial institutions may impose. Fintech facilitates financial inclusion for small and medium enterprises (SMEs) by reducing financial frictions arising from collateral and loan constraints (Sharma et al., 2023). This better access to finance stimulates productivity growth and improves the financial performance of SMEs (Sharma et al., 2023). In addition, Fintech can improve financial access for small businesses that are underserved by banks or formal financial institutions (Najib et al., 2021).

Furthermore, Fintech contributes to risk management in the financial sector, which is essential for small businesses. Fintech companies are considered the future of the financial sector, and understanding the risks associated with investing in these companies is critical for regulatory authorities and investors (Najaf et al., 2020). By collaborating with financial institutions and developing innovative financial services and products, Fintech improves financial risk management in the financial system, ultimately reducing risks to financial stability (Ozili, 2022).

Additionally, Fintech enables small businesses to take advantage of innovative financial services and products, such as equity-based crowdfunding, online peer-to-peer lending, and online e-commerce (Tedyono, 2023). These services not only provide financial support but also create new business models and opportunities for startups (Elia et al., 2022). Fintech also decentralizes financial services, lowers unit costs of financial intermediaries, and increases competition in credit markets, making small business lending a revenue-generating proposition (Thomas, 2023). In conclusion, Fintech empowers small businesses by increasing their access to financial services, reducing financial constraints, improving risk management, and driving innovation in the financial sector. By leveraging Fintech solutions, small businesses can better navigate financial risks and seize growth opportunities in an increasingly competitive business environment.

3.4.2. Security challenges faced by fintech users.

The security challenges faced by fintech users include a variety of critical issues that are critical to ensuring consumer security and trust in financial technology services. One of the main concerns highlighted in the literature is the protection of consumer data, which is emphasized by various studies (Tian et al., 2021; Dorfleitner et al., 2021; Karim et al., 2022; Alam et al., 2021; Gupta, 2024). Fintech providers must prioritize products that are not only user-friendly and meet consumer needs but also implement strong measures to protect consumer data, thereby building trust and increasing adoption (Nawayseh, 2020; Barbu et al., 2021; Josyula, 2023). The rapid expansion of the fintech sector has attracted the attention of regulators to improve data protection and financial information disclosure (Shoetan, 2024; Rizinski et al., 2022). In addition, the increase in digital platforms for financial transactions also increases the importance of fraud detection in fintech, which requires the application of advanced technologies such as machine learning and behavioral analysis (Gopalan et al., 2023; Prastiyo & Suartha, 2021).

Additionally, the integration of blockchain technology in fintech and the use of adaptive algorithms demonstrate the importance of strong data protection in financial transactions (Alam et al., 2021). Ethical considerations in machine learning applications in fintech also highlight the importance of addressing issues such as bias, discrimination and data protection. The emergence of international fintech players and digital banks further emphasizes the need to ensure consumer privacy and data protection. Apart from that, the application of cyber ethics in fintech has a crucial role in protecting the personal data of users and third parties.

Overall, the security challenges faced by fintech users center on protecting consumer data, fraud detection, regulatory compliance, and maintaining ethical standards in the use of advanced technology. Addressing these challenges requires a comprehensive approach that prioritizes data security, regulatory compliance, and ethical practices to increase trust and security for users using fintech services.

3.5. Regulatory and Policy Factors

3.5.1. Government regulations and their impact on fintech adoption.

Government regulations play an important role in shaping the acceptance of financial technology (Fintech) services. Several studies highlight the impact of government support and regulatory frameworks on the adoption of Fintech innovations. Das & Das (2022) emphasize that government support, trust, perceived benefits, attitudes, and social influence positively influence the level of Fintech adoption. They emphasized the importance of strong security measures and regulatory oversight to increase trust in Fintech services. Setiawan et al. (2021) further outlined the importance of the government in improving Information and Communication Technology (ICT) infrastructure, encouraging Fintech startups, and providing a regulatory sandbox to encourage financial inclusion and innovation.

Research shows a positive correlation between regulatory initiatives and Fintech adoption (Cumming et al., 2023). Nathan et al. (2022) emphasize the important role of adaptive regulation in stimulating Fintech growth, especially in the face of crises such as the COVID-19 pandemic. In addition, regulatory services have been proven to have a positive influence on Fintech adoption in organizational settings (Kurniasari et al., 2023). These findings underscore the crucial role of regulatory frameworks in facilitating the integration of Fintech services.

On the other hand, regulatory challenges are a significant obstacle to Fintech adoption in various regions (Imam et al., 2022). Muryanto (2022) specifically highlights the importance of Sharia compliance regulations for Islamic Fintech, emphasizing strict supervision and compliance with Sharia principles. In addition, implementing a regulatory sandbox is recognized as being able to reduce legal and institutional risks, as well as encourage the adoption of flexible business models among Fintech startups (Goo & Heo, 2020).

Overall, government regulation has a major influence on Fintech adoption by creating a supportive environment, ensuring security and trust, encouraging innovation, and overcoming regulatory barriers. An effective regulatory framework is critical to developing Fintech, promoting financial inclusion, and maintaining stability in the financial services sector.

3.5.2. Policy initiatives that support or hinder fintech development.

Policy initiatives play an important role in facilitating or hindering fintech development. Government support significantly shapes user perceptions and acceptance of fintech services (Zhong-qing et al., 2019). Policies that strengthen the fintech sector are essential for its continued evolution, benefiting both fintech entrepreneurs and investors (Nathan et al., 2022).

To increase inclusiveness in fintech, the government must prioritize improving Information and Communication Technology (ICT) infrastructure, encourage fintech startups, establish regulatory sandboxes, and encourage financial institutions to innovate for the underbanked population (Setiawan et al., 2021). Integration of government support through infrastructure, policies and regulations is crucial to accelerate fintech adoption (Setiawan et al., 2023).

In the midst of the COVID-19 pandemic, government support is crucial in encouraging fintech companies to meet consumer demands despite restrictions on face-to-face services (Nurfadilah & Samidi, 2021). Regulatory support, including the establishment of a regulatory framework, is very important to foster a supportive fintech ecosystem (Sudarwanto, 2023). In addition, the importance of compliance with sharia regulations has been emphasized to accelerate the growth of sharia fintech, indicating the need for regulatory and policy support (Muryanto, 2022).

Furthermore, fintech growth depends on proactive policies, indicating the importance of regulatory frameworks and government initiatives in accelerating fintech expansion (Wang et al., 2020). Government support positively influences consumer attitudes towards fintech adoption, highlighting the important role of policy initiatives in shaping fintech acceptance ("ASSESSMENT OF COMPETENCES OF THE GOVERNMENTS OF THE REPUBLIC OF LITHUANIA", 2023). The existence of fintech and sharia fintech requires support from local government policies and the wider community for sustainable growth (Mansur et al., 2022). In conclusion, government support through infrastructure development, regulatory frameworks and policy initiatives plays a crucial role in facilitating the development of fintech. By creating an environment that supports fintech innovation, governments can encourage financial inclusion, increase trust in fintech services, and stimulate economic growth in the digital economy.

3.6. Social and Cultural Aspects

3.6.1. Public perceptions and attitudes towards fintech.

Public perceptions and attitudes towards fintech are influenced by various factors that influence the adoption and utilization of financial technology services. Trust is a significant factor influencing users' attitudes towards adopting fintech services (Zhong-qing et al., 2019). Users' trust in fintech services influences their willingness to adopt and use this technology. In addition, perceptions of usefulness, ease of use, risk and security also significantly influence consumer attitudes towards fintech (Laksamana et al., 2022). Users tend to have a positive attitude towards fintech if they find it useful, easy to use and safe.

Furthermore, perceptions about the benefits of fintech applications have a positive impact on customer attitudes, leading to higher levels of acceptance and adoption (Winarto, 2022). Perceptions of usefulness and ease of use are very important in shaping attitudes towards fintech services and subsequently influencing behavioral intentions (Baber & Billah, 2022). Research shows that as consumers view fintech services as increasingly useful, their overall attitude towards using these services improves (Majid, 2021).

The COVID-19 pandemic has also influenced perceptions of fintech, with fintech being seen as a more efficient and faster way to access financial services, especially during times of physical restrictions and health protocols (Nathan et al., 2022). The pandemic has highlighted the importance of fintech in providing easily accessible financial services. In conclusion, public perceptions and attitudes towards fintech are shaped by factors such as trust, perception of usefulness, ease of use, security and perceived benefits. Understanding these factors is critical to driving adoption of fintech services and increasing financial inclusion.

3.6.2. The influence of financial literacy on the use of fintech.

Financial literacy plays an important role in influencing the adoption and use of financial technology (fintech) services. Research consistently shows that individuals with higher levels of financial literacy have greater awareness of fintech products, which ultimately drives their adoption (Qi, 2024; Setiawan et al., 2023). Financial literacy was identified as a significant positive factor influencing the level of fintech usage (Sasikirono, 2023). In addition, financial literacy not only encourages the adoption and use of fintech but also contributes to financial inclusion and supports the achievement of the Sustainable Development Goals (SDGs) (Treu, 2023).

Research shows a positive correlation between financial literacy and fintech adoption (Setiawan et al., 2021; Setiawan et al., 2023). Individuals with high levels of financial literacy demonstrate greater ease in understanding and using new digital-based financial products and services, illustrating a clear positive relationship between financial literacy and fintech adoption (Setiawan et al., 2023). Additionally, financial literacy significantly influences an individual's ability to use fintech services effectively (Martini et al., 2021).

Furthermore, financial literacy is consistently raised as a critical factor in the adoption of fintech products and services (Kakinuma, 2022). Effective utilization of fintech services is suggested to require financial knowledge, highlighting the importance of financial literacy in this context (Srivastava, 2023). The impact of financial literacy on fintech adoption is strengthened by its role as a mediator that strengthens the influence of factors such as usage, digitalization and financial technology on sustainable growth (Wicaksana, 2023). In conclusion, a number of studies confirm that financial literacy significantly influences the adoption and use of fintech services. Individuals with high levels of financial literacy tend to have more trust in fintech services, adopt them with a positive attitude, and are able to utilize fintech products effectively, thereby driving financial inclusion and broader development goals.

4. Conclusions

Fintech has significantly changed the landscape of the financial industry, increasing access to banking and financing services, improving transaction efficiency, helping small businesses manage financial risks, and presenting security and regulatory challenges and benefits. Various studies show that fintech not only increases financial inclusion but also reduces operational costs and facilitates access to a wider range of financial services.

The increase in financial access caused by fintech has positive implications in promoting global financial inclusion. By providing more affordable and accessible services, fintech opens up new opportunities for individuals and businesses, especially in areas underserved by traditional financial institutions. Improved efficiency also means that financial transactions are faster and cheaper, increasing competitiveness and economic growth.

Despite its significant benefits, the use of fintech also faces a number of limitations. Challenges include security risks related to personal data protection, complex regulatory compliance, and uncertainty related to the long-term impact of this technological transformation on the stability of the global financial system. In addition, there is uncertainty regarding the adaptation of fintech in rural areas or with low financial literacy.

To overcome the challenges and maximize the benefits of fintech, future research could focus on several areas. First, more research is needed to better understand the impact of fintech on global financial stability, especially in developing countries. Second, broader and in-depth empirical studies are needed to explore the interactions between fintech innovation, financial inclusion, and sustainable development. Third, ethical research in fintech applications is also important to ensure that these innovations are not only beneficial but also ethical and fair for all parties involved.

Thus, while fintech has brought about significant change in the global financial industry, the challenges and opportunities it faces highlight the need for continued research and a cautious approach in promoting and managing this innovation effectively.

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