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(AIJBES)www.aijbbs.com**CHALLENGES FACED BY SMALL BUSINESS
ENTREPRENEURS IN DIGITAL FINANCIAL TRANSACTION
SYSTEM**

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Abstract:

The rapid adoption of digital payment systems, including mobile payments, e-commerce transactions, and digital wallets, has transformed the way small businesses manage financial transactions. While these advancements provide enhanced convenience, accessibility, and efficiency, they also present unique challenges for small business entrepreneurs. These challenges primarily stem from the cost constraint and limited budgets, cybersecurity risks, lack of technical expertise, and the evolving regulatory landscape. This paper explores the difficulties faced by small business entrepreneurs in navigating these digital financial systems, particularly in ensuring secure, transparent, and compliant transactions. It examines how emerging technologies such as blockchain, big data analytics, and artificial intelligence (AI) can offer solutions by improving transaction tracking, identifying discrepancies, and enhancing fraud prevention. However, small businesses often struggle with limited resources and expertise to fully leverage these technologies. The paper also highlights challenges related to data privacy, managing cross-border transactions, and adapting to constantly changing digital payment trends. By discussing these challenges, this paper underscores the need for small businesses to adopt a combination of technological tools, training, and expert support to ensure secure and efficient management of digital financial transaction.

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**Keywords:**

Digital Payment Systems, Small Business Entrepreneurs, Financial Transactions, E-commerce Transactions, Technical Expertise, Cybersecurity Risks

Introduction

In recent years, the adoption of mobile payments, e-commerce platforms, and digital wallets has facilitated remarkable convenience and accessibility for consumers and businesses alike. These advancements have significantly altered how small businesses operate, particularly in the realm of financial transactions. Entrepreneurs today can now compete more effectively in a digitized, globalized economy, thanks to technologies that enable greater speed, efficiency, and outreach. As Chen et al. (2020) noted, these innovations help small businesses expand the proliferation of their services while streamlining payment procedures. Similarly, Kumar and Sharma (2021) argue that south-western economies are undergoing a modernization facelift driven by these technological shifts. As the digital revolution extends its reach across industries, people are now more comfortable and secure in adopting tech-based financial solutions (Lyons & Kass-Hanna, 2022).

However, the rapid integration of modern digital systems also presents substantial challenges for small business owners. Davis (2021) emphasizes that the benefits of these technologies come with notable drawbacks, especially for those lacking technical knowledge or sufficient resources. From a traditional perspective, a small business owner coping with a growing customer base while facing cybersecurity threats can find it difficult to navigate and manage. The complexity of addressing increasingly sophisticated customer expectations, when paired with limited technical skills and tight budgets, often creates significant operational strain.

One of the primary issues is the rising threat of cybersecurity attacks. As small businesses embrace digital payment systems, they become prime targets for cybercriminals who exploit their often-inadequate security infrastructures. Threats such as data breaches, phishing scams, and ransomware attacks pose serious risks to both business operations and customer trust. Moreover, many small business owners lack the technical expertise to properly set up, manage, and secure these digital tools. This knowledge gap can result in system misconfigurations, security vulnerabilities, and inefficient transaction processes.

In addition, the financial burden of implementing and maintaining digital payment systems is a critical concern. Costs related to software licenses, hardware, transaction fees, and employee training can be overwhelming for businesses operating with constrained resources. Integration with existing legacy systems further complicates the situation. Many small businesses continue to use outdated software for accounting or inventory management, and integrating new digital payment solutions can lead to compatibility issues, data migration challenges, and workflow disruptions. Another significant issue lies in the user experience and customer trust. Consumers expect fast, secure, and intuitive payment options. If the digital systems are slow, unreliable, or confusing, customers may abandon their purchases or hesitate to return. Compliance with financial regulations adds another layer of complexity, as small businesses must adhere to standards such as PCI-DSS and regional data protection laws. Non-compliance can lead to penalties or the inability to process transactions altogether. Moreover, small business owners

frequently encounter inadequate customer support from payment service providers, many of which prioritize larger clients. This lack of responsive assistance can leave businesses struggling to resolve urgent technical issues. Additionally, the rise in fraudulent transactions and chargebacks—especially when dealing with online payments—exposes businesses to financial losses and reputational harm.

Therefore, this paper reviews these primary challenges faced by small businesses in managing digital payment systems and evaluates the potential of emerging technologies such as blockchain, artificial intelligence (AI), and big data analytics to address them. By examining both the issues and the innovative solutions available, this study aims to provide actionable recommendations for small business owners seeking to enhance the security, transparency, and efficiency of their financial operations.

Literature Review

There are four points will be discussed in the literature review. The first one is digital payments and small businesses, challenges faced by small entrepreneurs in adoption of digital financial transactions system, the emerging technologies as solutions and additional concerns related to this topic.

Digital Payment Systems and Small Businesses

In the new era of digitalization, there have been some shifts in different businesses owing to advancements in technology since there is an increased emphasis of firms on incorporating digital technologies (Berger et al., 2021). In addition, digital entrepreneurship plays an important role in stimulating economic growth in countries (Soltanifar et al., 2021). The advent of digital payment systems has radically changed the world of financial transactions. This change has been advantageous for small businesses as it allows them to receive payments promptly, minimizes the use of cash, and enhances the customer's experience (Kumar & Sharma, 2021). Payment solutions are increasingly becoming commonplace in the daily activities of businesses, spanning from mobile applications like Apple Pay and Google Pay to online services like PayPal, Stripe, and Square (Chen et al., 2020). Customers use their smartphones to make purchases, and payment is made via secure contactless technology. There has also been tremendous growth in e-commerce, enabling small businesses to market their products and services beyond the confines of their local areas. With the introduction of digital wallets, consumers can conveniently keep their card and account details. These tools work with high precision and are extremely scalable as well. Whether it is a local cafe or a growing online boutique, small businesses can easily implement digital payment methods to meet customer satisfaction while improving backend operations. In addition, automated payments, real-time payment monitoring, and receipt generation, as well as accounting software interfaces, reduce administrative work overload while enhancing transparency (Chen et al., 2020). Despite these advantages, the adoption of digital payment systems often introduces operational complexities and new risks, which will be explored in the following section.

Challenges Faced by Small Business Entrepreneurs in Adoption of Digital Financial Transactions System

Cost Constraints and Limited Budgets

New technologies like AI, blockchain, and big data analytics are typically also linked with prohibitively high implementation and maintenance costs. There are licensing fees, investment

in hardware, and maintenance support that can be out of reach for small businesses with narrow profit margins. Hence, the majority of entrepreneurs are forced to operate on lower levels of or outdated systems, and they are deprived of the efficiency and protection benefits of modern tools (Chen et al., 2020). Similarly, Maroufkhani et al.'s (2020) research highlights that small and medium-sized enterprises (SMEs) often face financial, technical, and organizational barriers in the adoption of digital technologies, which widens the competitiveness gap between large firms and SMEs. Further, according to Mittal et al. (2018), the study examines Industry 4.0 technology barriers and found that SMEs in particular face internal resistance, insufficient funding, and poor infrastructure as core barriers. Meanwhile, Bouwman et al. (2018) states that without external support or cooperation, the majority of SMEs are not able to bridge the digital divide due to insufficient resources and uncertain return on investment.

Cybersecurity and Fraud Risks

The increase in reliance on digital systems has rendered small businesses particularly susceptible to a cyber-attack. Small businesses do not have many of the resources that larger firms benefit from when it comes to security. Large organizations are able to have a cyber security team while small businesses may not even have an IT person in-house. Cyber threats not only include phishing, malware, ransomware, and payment fraud, but they also pose risks to sensitive customer and financial information. Once financial data is hacked, or financial fraud occurs, that data may even become digital currency (Wang & Patel, 2023). A single hack can lead to financial loss and reputational harm that may be impossible to come back from. Previous studies have constantly shown that small businesses are very vulnerable to cyberattack due to the availability of limited resources and expertise. As an example, Verizon's Data Breach Investigations Report 2019 indicated that 43% of victims were small businesses with phishing and ransomware as the common attacks. In the same vein, Ponemon Institute's 2018 research underscored the exorbitant breach costs of small businesses, at an average of \$120,000 per breach, usually compounded by inadequate incident response planning. U.S. Small Business Administration (2017) and Symantec (2018) reports also showed that while small business owners are aware of the threats, most inadequately invest in cybersecurity. To fill this gap, NIST initiated the Small Business Cybersecurity Corner in 2018 to make guidance more accessible.

In addition, the Insurance Information Institute (2019) reported that without cyber insurance, many small companies had to endure massive financial losses following the attack. These studies together paint a picture that cybersecurity and fraud threats have been persistent problems for small businesses for years. Moreover, small companies embracing digital transformation are vulnerable to cybersecurity threats. With more business processes going digital, cyberattacks such as data breaches, ransomware, and phishing attacks have risen. Small companies are most vulnerable to such attacks due to limited resources and lack of experience in cybersecurity. Protecting sensitive data and keeping digital assets secure is a critical challenge that small companies must address in order to manage risks effectively (Vats, 2024).

Lack of Infrastructure and Technical Expertise

A universal challenge for small businesses is a lack of digital skills among staff and expertise. It is most probable that such small business individuals and workers lack technical proficiency were tasked with efficiently leveraging sophisticated digital platforms and tools. The employees could not be utilizing use digital technology to their full capacity since they are not

digitally literate. Further, it could be difficult for small firms to find and hold onto employees with specialist digital competencies in fields like digital marketing, cybersecurity, and data analytics (Vats, 2024). Finding digital financial systems to implement and sustain your business usually takes technical knowledge that many business owners do not possess. For example, selecting the appropriate payment option, the appropriate payment gateway, and connecting everything to existing POS systems is incredibly technical. The decisions that small businesses are required to make often severely impact operational efficiency and customer experience. Without access to IT or training, small businesses are left to flounder through the adoption of new tools (Davis, 2021).

Even where budget is available, small firms lack the internal organization or personnel to adopt and maintain advanced technology. It costs money to employ IT specialists or data scientists, and most small firms do not have specialized departments of technology or security. This lack of expertise limits the ability to install, maintain, or optimize digital software in an efficient manner (Davis, 2021). According to Ponemon Institute – "The 2018 State of Cybersecurity in Small and Medium-Sized Businesses", they found that, 70% of small businesses reported they did not have a dedicated IT security expert. Many small business owners relied on general IT staff (or none at all) who lacked specialized knowledge of cyber threats. This lack of cybersecurity expertise made it hard for businesses to properly secure new digital transaction platforms (e.g., cloud-based POS systems, online payment platforms).

Regulatory and Compliance Burdens

Small and medium enterprises (SMEs) are increasingly being referred to as drivers of economic development, but they are plagued with a range of challenges in adopting digital financial transaction systems. Of these, regulatory and compliance charges are consistently found to be prominent impediments. The World Bank (2020) highlights that SMEs generally struggle to comply with stringent Know Your Customer (KYC) and Anti-Money Laundering (AML) measures. The regulations, even though they are critical for maintaining the integrity of financial systems, entail very high compliance costs, which disproportionately affect small firms because they lack the required human and financial resources to support advanced verification and reporting systems.

Similarly, the Organisation for Economic Co-operation and Development, OECD (2021) stated that compliance costs with regulations hinder the digital transformation of SMEs. Digital financial services require rigorous adherence to cybersecurity, consumer protection, and data privacy regulations, which several SMEs find onerous to adhere to in the absence of specialized departments for compliance. In the OECD's opinion, administrative expenses typically far outweigh SMEs' perceived benefits of digitalization. Asian Development Bank, ADB (2019) further emphasizes that regulatory uncertainty, particularly uncertain or inconsistent fintech regulations, hinders SMEs from adopting digital financial platforms. Many small and medium enterprises lack legal competency to interpret evolving compliance needs and thus are not prepared to invest in digital infrastructure. In the growth markets, International Finance Corporation, IFC (2017) identifies customer due diligence (CDD) practices as being a principal constraint. It also identifies that electronic financial service onboarding procedures necessitate excessive documentation and risk management processes that generate higher transactional costs to SMEs than those to larger entities.

In addition, UNCTAD (2021) highlights how cross-border regulatory fragmentation and strict data protection laws like the General Data Protection Regulation (GDPR) become additional hurdles for global SMEs. The majority of small companies are unable to match various regulatory landscapes and as a result limit their ability to expand digital financial operations across global markets. Navigating the regulatory landscape is another key area of concern. All digital payments are subject to regulatory compliance requirements - including PCI DSS for payment security, GDPR for data protection, and local tax laws - which are often complex, and fluid, creating added pressure for small business owners to stay on top of and compliant with the regulations. Non-compliance can lead to fines/penalties/ and statutory action (Smith & Nguyen, 2022).

Emerging Technologies as Solutions

Blockchain Technology

Blockchain offers an open and decentralized system of ledgers that can significantly improve the way transactions are written and verified. For small businesses, blockchain can reduce fraud by making transaction history transparent and impenetrable. Programmable contracts on the blockchain, known as smart contracts, can be used to automate processes such as payments to suppliers, eliminating the middleman and the likelihood of conflicts (Wang & Patel, 2023).

Besides, blockchain can enhance transparency in activities like inventory tracking, paying suppliers, and even cross-border payments by giving real-time visibility into every step of the payment process (Chen et al., 2020).

Big Data Analytics

Big data software allows businesses to run and analyze big volumes of transactional data in real time. For small businesses, this means obtaining valuable insights into customer behavior, identifying unusual patterns, and spotting potential fraud more effectively. Through analytics, business owners can also forecast cash flows, calculate financial health, and make smart decisions to increase profitability (Kumar & Sharma, 2021). Even simple tools linked with point-of-sale machines or payment websites can provide dashboards to help track sales trends, inventory turnover, and seasonal variations (Davis, 2021).

Artificial Intelligence (AI)

AI technologies, particularly as machine learning and predictive analytics, have the ability to automate most digital financial management. AI-based fraud detection systems are able to monitor patterns of transactions, notify potential fraud, and prevent losses from occurring. AI chatbots and virtual assistants also assist customer service operations, enabling small businesses to manage large volumes of payment-related inquiries without the need for a large support team (Smith & Nguyen, 2022). AI is also used in bookkeeping and expenses classification, saving time spent on manual financial management and limiting human error (Wang & Patel, 2023).

Additional Concerns

In addition to the principal challenges and technological hurdles, small enterprises must also grapple with a series of broader issues that render it increasingly complex to leverage digital financial systems. These inevitably intersect with legal, operational, as well as strategic dimensions of undertaking business in a digital-first landscape.

Data Privacy and Protection

Handling sensitive customer and financial data has legal and ethical requirements. Regulations such as the General Data Protection Regulation (GDPR) in the EU and the California Consumer Privacy Act (CCPA) in the U.S. impose strict requirements on data collection, storage, and transmission. Small businesses, however, lack the expertise and resources to be completely compliant. Lack of good data protection processes not only jeopardizes organizations with regulatory fines but also erodes trust among customers—precious assets in today's competitive climate (Smith & Nguyen, 2022).

Cross-Border Transaction Issues

Electronic payment mechanisms enable small businesses to expand customer bases around the globe, yet international transactions impose a new layer of complexity. Business operators have to deal with exchange rates from other nations, international fees, and differing regulation regimes. Also, cross-border disputes and discrepancies in data protection laws can engender juridical uncertainty. In the absence of appropriate instructions or infrastructure, it is an administrative and economic nightmare (Kumar & Sharma, 2021).

Keeping Up with Evolving Trends

The payments landscape online is evolving rapidly, with fresh platforms, tools, and standards emerging at a steady pace. From contactless payments and BNPL to cryptocurrency uptake and DeFi, small businesses must continue to adapt to remain ahead. But adapting costs time, investigation, and adaptability—time that many small business owners lack when immersed in day-to-day operations (Davis, 2021).

Research Methodology

This study adopts a descriptive conceptual review approach to review the challenges faced by small business entrepreneurs in digital financial transaction system. The sources of data include peer-reviewed journal articles and academic database such as Scopus, Web of Science and Google Scholar. The data collection process involved a structured search using keywords such as "digital financial transaction system", "challenges", and "small business entrepreneurs". Articles were selected based on relevance, citation frequency, and recency. The technique of analysis was content synthesis where the key challenges faced by small business entrepreneurs in digital financial transactions were identified.

Discussion

The objective of this conceptual paper is to summarize the existing research studies regarding the challenges faced by small business entrepreneurs in adopting digital financial transactions system. Therefore, the result from the thorough evaluation of the body of current literature are summarized in the Table 1 below:

Table 1: Challenges Faced by Small Business Entrepreneurs in Adopting Digital Financial Transaction System

Challenges	Description
Cost constraints and limited budgets	High costs of new technologies, software, and infrastructure make it hard for small businesses to adopt modern systems. Many operate on tight budgets and cannot afford upgrades.
Cybersecurity and fraud risks	Small businesses lack strong cybersecurity protections and are vulnerable to attacks like phishing, ransomware, and data breaches. Limited budgets and no dedicated IT staff worsen the risk.
Lack of infrastructure and expertise	Many small firms lack trained staff and technical knowledge to adopt or manage digital systems. Hiring experts or investing in digital training is often out of reach.
Regulatory and compliance burdens	SMEs struggle with strict digital finance regulations like KYC, AML, GDPR. They lack the resources and legal expertise to stay compliant, which increases risk and operational costs.

In addition, in order to navigate the complex landscape of digital financial systems, small businesses must utilize a multilateral strategy that incorporates technology, training, and expert counsel. Therefore, this study provides recommendations for small business owners seeking to enhance the security, transparency, and efficiency of their financial operations as presented in the Table 2 to address the problems and concerns identified in previous sections.

Table 2: Recommendations for Small Business Owners

Recommendation	Description
Partner with fintech service providers	Collaborate with fintech firms to access advanced digital tools without the burden of full development or maintenance. Modular applications can support invoicing, analytics, and cross-border payments, enhancing business agility.
Provide staff training in digital literacy and cybersecurity	Offer continuous education on digital tools, cybersecurity protocols, and regulatory compliance. Training reduces risks from human error and fraud, and strengthens digital confidence among employees.
Use managed services for compliance and risk Management	Outsource legal and regulatory functions to expert third parties. These services help ensure compliance with evolving laws such as GDPR and AML, reducing liability and promoting ethical financial operations.
Develop a long-term digital strategy	Create a phased digital roadmap aligned with business goals. Include technology upgrades, performance pilots, and strategic scaling to stay competitive in an evolving digital marketplace.

Contribution

This study makes significant contributions across academic, industry, and national domains. Academically, it fills an important gap in the literature because it explains problems of digital payment systems adoption in small businesses, an area that has received little attention compared to major companies. Using an interdisciplinary perspective that integrates financial technology, data analytics, and small business management, the study also provides a multidisciplinary ground for further inquiry. From a business viewpoint, the study offers actionable advice and a strategic guide to strategy that can guide small business owners in adopting new technologies such as blockchain, artificial intelligence, and big data analytics. These recommendations are intended to enhance the security, transparency, and efficiency of

their financial transactions. Additionally, the findings can be applied by fintech solution providers to map their innovations more precisely to the unique needs of small businesses. At a national level, the research reiterates broader goals of financial inclusion and digital development. Its insights can be utilized by policymakers in crafting enabling programs and policies that result in the mass and secure embracement of digital payment systems by SMEs, resulting in an enhanced resilient and transparent digital economy.

Conclusion

Digitalization of financial systems has brought both unprecedented opportunities and advanced challenges for small business entrepreneurs. Digital payment systems are now a necessity to enhance the efficiency of transactions, reach wider markets, and run the business more effectively. However, with all these benefits come risks related to cybersecurity, regulatory compliance, technical complexity, and rapidly evolving financial technologies. Small business tends to be disadvantaged due to limited resources, infrastructure, and know-how. As discussed in this paper, emerging technologies like blockchain, big data analytics, and artificial intelligence offer strong solutions to improve transparency, fraud detection, and process efficiency (Chen et al., 2020; Smith & Nguyen, 2022). However, adoption obstacles like cost, digital fatigue, and regulatory complexity must be surmounted through planning and external support. By partnering with fintech providers, along with investing in employee training and compliance services, small businesses can overcome many of these challenges. A long-term digital strategy, one that balances innovation and responsibility, is the path to success in an ever-changing financial environment (Davis, 2021). In this changing landscape, small business resilience is not just about keeping up with technology, but using it strategically. With the right assistance, the appropriate tools, and direction, digital finance can be transformed from a source of worry into a driver for sustainable growth. Other than that, the policymakers should provide financial support and technical help in the form of training in technological issues to SMEs because smaller companies have less access to digital technology and finance (Dimitratos & Kyriakopoulos, 2022). In uncertain times, it is recommended that SMEs invest in e-platforms, artificial intelligence, and blockchain environments to overcome their smallness in terms of their resources, knowledge, and capabilities minimizing their vulnerability to economic crises and environmental changes (OECD, 2021).

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