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Transitioning to Cashless Society: Challenges and Opportunities for Small Business

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Abstract

The concept of a cashless society has emerged as a prominent research subject, with scholars exploring its advantages and disadvantages extensively. A review of the existing literature identifies a significant gap in understanding its positive and negative implications for small businesses. This gap is particularly noteworthy given that small businesses constitute a substantial proportion of gross domestic product (GDP) and experience high levels of foot traffic. Addressing this research gap is essential to generate interest and engagement among stakeholders. This study, by critically examining the effects of a cashless society on small businesses, not only fills this gap but also offers valuable insights into this underexplored area. The study adopts a quantitative research approach. Primary data were collected through an online structure survey questionnaire (N242). The Mann-Whitney Rank, Cronbach's and Kolmogorov-Smirnov tests were employed to analyse data using Statistical Packages for Social Sciences (SPSS). Word Cloud and Excel-generated graphs are also used to analyse data. The study findings suggest that a cashless society has positive implications for small businesses, conditioned continued support is provided throughout the evolving landscape. This should make the audience feel optimistic and hopeful about the future of small businesses in a cashless society. The findings of this study have significant practical implications for small businesses considering operating in a cashless society. By highlighting these implications, the study equips the reader with valuable insights for navigating the future of a cashless society, thereby enhancing their business strategies and operations and making them feel prepared and equipped.

Keywords

Cashless Society, Small Business, Business Strategies, Digital Payment Systems

1. Introduction

Small businesses with limited resources are vulnerable to the adverse effects of a cashless economy. This is due to increased transactional costs, insufficient technological expertise, and reduced customer access (Rahman, Ismail, & Bahri, 2020; Santana, 2019). Conversely, potential advantages of a cashless economy for small businesses include improved financial tracking, operational efficiency, and enhanced security (Deora, 2018; Priyono, Moin, & Putri, 2020; Santana, 2019). The gap in exploring the challenges and opportunities for small businesses leaves policymakers and stakeholders with insufficient insights to address these needs. These gaps in the literature also provide a fascinating area for further research.

The concept of a cashless society has become more prominent recently, accompanied by certain advantages and disadvantages from different perspectives concerning businesses and customers. On one hand, cashless transactions enhance business efficiency, reduce cash handling risks, and offer better financial transparency. They also provide customers with convenience, speed, and better access to digital services (Busse, 2023). However, the transition to cashless systems brings problems, such as cybersecurity risks, privacy concerns, and exclusion of people and businesses unable to adopt digital payment methods (Umar, Musalli, & Yusuf, 2023).

The effects a cashless society has on small businesses are multilayered. Small businesses' financial and technological resources are usually minimal, so investing in digital payment infrastructure is challenging. Additionally, transactional fees related to digital payments could reduce already-thin profit margins. Other technological barriers, such as lack of access to reliable internet or digital literacy, further worsen small businesses' challenges. Moreover, the digital divide—or the gap between those with access to digital technologies and those without—can decrease customer access for firms relying on a local or underserved population that prefers or needs to make cash-based transactions (Berkimbayeva, 2019).

Conversely, some gains could be realized if small businesses are willing to go cashless. Cashless systems facilitate better financial record-keeping, improve cash flow management, and reduce risks of theft and counterfeit money. These advantages indicate that exploring avenues to assist small businesses in transitioning to cashless payment systems will help them seize the opportunities while addressing the challenges.

Despite the growing interest in the implications of a cashless society, there is a notable lack of studies focused on its impact on small businesses that employ between 1 to 20 individuals. The reviewed literature predominantly addresses broader economic or societal effects, often overlooking the specific needs and vulnerabilities of small enterprises. This significant research gap highlights the necessity to explore how small businesses adapt to the transition toward cashless systems, the challenges they encounter, and the strategies they employ for adjustment. This paper aims to address this gap by considering the following research questions: 1) What overall benefits and challenges do small businesses experience

within cashless societies? 2) In what ways do cashless payment systems enhance transaction efficiency for small businesses? 3) How does customer satisfaction differ based on the type of cashless payment system utilized (e.g., mobile wallets, credit/debit cards, QR codes)? 4) How do small businesses manage the costs associated with operating in cashless environments to sustain profitability? 5) Is there a significant correlation between the adoption of cashless payment systems and increased sales for small businesses? 6) What key technological challenges do small businesses face when transitioning to cashless transactions? 7) How do existing laws and regulations regarding cashless transactions affect the operations and growth of small businesses?

The remainder of this paper is structured as follows: Section 2 reviews the literature for gap identification and hypotheses development. Section 3 outlines the research methodology employed in the study. Section 4 presents the research, the results, and analysis, also discussing empirical findings and their implications. Finally, Section 5 concludes the study by summarising key insights, addressing limitations, and offering recommendations for small businesses and future research.

2. Literature Review

The concept of money as a medium of exchange has evolved significantly over time. The use of coins, one of the earliest forms of currency, is said to have originated in China around 1000 BC (The History of Money, 2023). Paper money, widely accepted as legal tender approximately 300 years ago, further transformed monetary transactions (Chakravorti, Chakravorti, & Mazzotta, 2016). However, the advent of cashless transactions—payments without physical cash—has transcended traditional norms of economic exchange (Duignan, 2023; Halldenius & Petersén, 2024; Khando, Islam, & Gao, 2022; McRea, 2024). The first wave of less-cash transactions can be traced to the introduction of bank checks and, later, credit cards in the 1950s. With the introduction of the Diner's Club Card and American Express Card during this period, providers could charge transactional fees for customers and businesses (Encyclopedia Brittanica, Experian, & The Federal Reserve Bank, 2019).

Over time, technological advancement developed these cashless systems into what has come to be called a "cashless society." A cashless society refers to a system where money dealings and transactions occur without using physical cash but with cards such as debit and credit cards, electronic money transfers, cryptocurrency, mobile wallets, and platforms such as PayPal (Duignan, 2023). Although a completely cashless society is yet to be realised, the increasing use of these methods underscores the movement toward global digital payments. This movement is promoted by increased financial technology, improved smartphone access, and consumer demand for convenience. The road to a cashless economy is paved with several opportunities and challenges for small businesses (Kireyev, 2017).

The literature review highlighted that the concept of a cashless society is one of the critical issues influencing economies, institutions, and individuals (ANZ,

2024; Asamoah, 2021; Berkimbayeva, 2019). Research on this topic remains fragmented, with recent studies exploring various dimensions of this phenomenon. This literature review synthesised data from 87 peer-reviewed journal articles, theses, government reports, and related material published between 2017 and 2024. The review identified gaps in existing research, emphasizing the need for further studies on the definition, benefits, drawbacks, prerequisites, and implications of a cashless society.

2.1. Definition of a Cashless Society

This study defines a cashless society based on prior research (Duignan, 2023; Halldenius & Petersén, 2024; Khando, Islam, & Gao, 2022; McRea, 2024). A cashless society can be understood as one in which financial transactions are made without physical cash but rely on electronic modes of transaction, such as credit or debit cards, online transfers, cryptocurrency, and mobile payment systems. According to the literature, no country has become entirely cashless; however, the rising usage of digital payment systems illustrates the global trend in this direction, propelled by government policies, financial sector strategies, and public demand.

2.2. Merits of a Cashless Society

Literature elaborates on the merits of transitioning towards a cashless economy, highlighting advantages that are economic, operational, and social.

Economic Efficiency: In a cashless economy, handling physical currency involves less friction, accelerating economic activities (Deora, 2018; Priyono, Moin, & Putri, 2020; Santana, 2019). The cost of printing and distributing notes and coins is reduced, saving government expenditures (Ekpeyong, 2023; Rahman, Ismail, & Bahri, 2020).

Transparency and Security: Digital transactions provide a traceable financial footprint, which helps combat corruption, fraud, and the circulation of counterfeit currency (Lachlan Schomburgk, Belli, & Hoffmann, 2024; Hidayah et al., 2023). Enhanced security protocols associated with electronic payments reduce the risk of theft compared to physical cash (Thoughtlab, 2018).

Convenience: Cashless systems facilitate convenience for businesses and consumers, as transactions can be easily made across borders without managing large amounts of physical cash (Rahman, Ismail, & Bahri, 2020; Santana, 2019).

Financial Inclusion: Digital payment systems can enhance financial inclusion by bringing previously excluded populations into formal financial systems (Ekpeyong, 2023; Hidayah et al., 2023).

2.3. Disadvantages of a Cashless Society

There are significant challenges associated with a cashless society.

Cybersecurity Risks: The increased use of digital payment systems exposes users to cybercrimes, such as hacking and identity theft (Priyono, Moin, & Putri, 2020;

Raya & Vargas, 2022). There are also concerns about data privacy and the potential misuse of personal financial information (Hidayah et al., 2023).

Infrastructure and Accessibility: Lack of access to digital infrastructure and the high costs of digital payment products hinder adoption, particularly in developing regions (Pasini, 2020; The History of Money, 2023). Digital illiteracy and technological exclusion of marginalized populations remain persistent challenges (Basid et al., 2023; Negreiro, 2020).

Economic Inequality: Many small businesses and informal sectors cannot adjust to cashless systems due to costs and infrastructure deficits in these economies (Asamoah, 2021; Ong et al., 2023).

Reliability Concerns: Loss of internet connectivity and system failures may disrupt digital payment systems, potentially jeopardizing economic stability (Deora, 2018; Kitamura & Kitamura, 2022).

Cultural and Psychological Factors: Attachment to cash as a familiar and tangible means of exchange encourages hesitation toward fully adopting cashless systems (The Mann-Whitney test, 2011).

2.4. Conditions Precedent for a Cashless Society

Critical conditions precedent for a cashless society are identified in the following studies:

Technological Infrastructure: A robust and ubiquitous digital infrastructure is necessary for electronic payment systems to function effectively (Chattopadhyay, Gulati, & Bose, 2018; Fabris, 2019).

Public Awareness and Education: Educating the public about digital financial tools and their benefits is crucial for increasing adoption (Rahman, Ismail, Bahri, & Rahman, 2022; Shy, 2021).

Policy Support: Government policies must incentivize digital payment methods and address barriers such as cost and accessibility (Muhibudeen & Haladu, 2018; Pritchard, 2022).

Cybersecurity Measures: Strengthening cybersecurity frameworks and building public trust in digital systems are vital (Balakrishnan & Shuib, 2021; Cohen, Rubinchik, & Shami, 2019).

Universal Access: Affordable digital payment products should be universally accessible to prevent financial exclusion (Basid et al., 2023; Ozili, 2020).

2.5. Impacts of Cashless Society

The movement toward a cashless society has widespread ramifications.

Economic Impacts: Mobile banking usage has increased significantly in countries that have embraced cashless systems, resulting in greater financial inclusion (Asamoah, 2021; Isah & Babalola, 2019). However, it may negatively impact small businesses that rely heavily on cash transactions if adequate measures are not in place (Ong & Chong, 2023).

Consumer Rights: Maintaining access to cash as an alternative safeguards con-

sumer rights and provides a safety net during economic uncertainties (Raya & Vargas, 2022; Santana, 2019).

Social Equity: Cashless systems can help reduce inequality by promoting financial inclusion; however, they may exacerbate inequality if infrastructural and educational disparities are not simultaneously addressed (Himberg, 2023; Priyono, Moin, & Putri, 2020).

2.6. Drivers of Cashless Societies

Technological Innovations: Mobile payment systems, cryptocurrencies, and blockchain technologies are among the innovations driving cashless societies. Fintech startups play a key role in disrupting traditional banking systems and facilitating digital transactions (Ozili, 2020). Similarly, widespread smartphone penetration and internet connectivity provide the necessary infrastructure for mobile payments to thrive.

Government Policies: Governments worldwide have implemented policies to encourage cashless transactions. For example, India's 2016 demonetisation policy aimed to curb corruption while promoting digital payments. Sweden has emerged as a frontrunner in the cashless movement, with policies that incentivize electronic transactions (Arvidsson, Hedman, & Segendorf, 2017).

Consumer Behavior: Consumer preferences have shifted toward digital convenience. The COVID-19 pandemic further accelerated this trend, as consumers avoided cash for hygiene reasons. Studies indicate a significant increase in digital payment adoption during the pandemic (Priyono, Moin, & Putri, 2020).

2.7. Literature Gaps in Cashless Societies

This literature review has identified the following key gaps in the existing body of research.

Impact on Small Businesses: The literature lacks sufficient research on how small business owners cope with the transition to a cashless system and their specific challenges.

Long-Term Socioeconomic Effects: There is a scarcity of studies on the long-term consequences of cashless systems on economic stability, consumer behaviour, and cultural norms.

Regional Disparities: There are limited comparisons of the reasons behind the adoption of cashless services across different regions and socioeconomic backgrounds.

Policy Effectiveness: Research on the effectiveness of policies designed to facilitate cashless adoption and overcome barriers is underdeveloped.

The literature on cashless societies emphasises the complex interactions between technological, economic, and socio-political factors driving the transition to digital economies. While the benefits of a cashless society are significant, challenges such as cybersecurity, accessibility, and public trust remain. A holistic approach is needed to balance innovation with inclusivity and resilience.

Research must focus on filling the gaps in understanding the impacts on small businesses and the long-term socioeconomic effects. Policymakers must also address the barriers vulnerable groups face, especially small businesses with limited resources, which are at greater risk in a cashless economy. Future empirical studies should focus on the adverse effects on small businesses to offer comprehensive insights into this transformation 2.2. Maintaining the Integrity of the Specifications.

3. Methodology

The study tests the following hypothesis:

Primary Hypothesis:

Small businesses operating in cashless societies are better off.

This hypothesis suggests that small businesses benefit from transitioning to or operating in societies where digital payment systems replace cash transactions. The hypothesis implies that the advantages of going cashless—such as improved efficiency, customer satisfaction, and potential sales growth—outweigh any challenges like transaction costs or technological barriers.

Sub-Hypotheses:

Hypothesis 1: Cashless societies increase transaction efficiency for small businesses.

This hypothesis posits that cashless transactions save time and effort compared to handling cash. For example, businesses no longer need to count cash, manage change, or travel to the bank for deposits. Digital payments can also streamline record-keeping, improving financial tracking and accuracy.

Hypothesis 2: Cashless societies increase customer satisfaction.

This hypothesis assumes that customers prefer the convenience and speed of cashless payment options. Cashless transactions eliminate the need to carry cash, ensure smoother checkout processes, and may also offer added benefits like reward points or digital receipts.

Hypothesis 3: Cashless societies do not increase costs associated with cashless transactions.

This hypothesis addresses concerns about fees or charges linked to cashless payments (e.g., credit card transaction fees or payment processor charges). These costs either remain negligible or are offset by the benefits of going cashless, such as increased sales or operational efficiency.

Hypothesis 4: Cashless societies increase sales.

This hypothesis asserts that businesses see higher sales when offering cashless payment options. Customers might spend more when using credit/debit cards or digital wallets than cash, as they are less constrained by the physical limits of their money.

Hypothesis 5: Small businesses are technologically prepared for cashless transactions.

This hypothesis assumes that small businesses have access to and are equipped

with the necessary infrastructure for cashless transactions, such as point-of-sale systems, card readers, or mobile payment solutions. It also implies that business owners are knowledgeable about using these technologies.

Hypothesis 6: Laws governing cashless transactions support small businesses.

This hypothesis suggests that cashless societies' legal and regulatory environment is favorable to small businesses. Policies may ensure fair transaction fees, protect businesses from fraud, and promote the accessibility of cashless payment systems for smaller enterprises.

3.1. Relationship Between Hypotheses

The primary hypothesis is supported if the sub-hypotheses collectively hold. For instance Efficiency (H1) and customer satisfaction (H2) drive operational improvements. Low costs (H3) and increased sales (H4) contribute to financial benefits. Technological readiness (H5) and supportive laws (H6) ensure businesses can transition smoothly. Each sub-hypothesis highlights a specific aspect of the cashless transition and its impact on small businesses.

3.2. Primary Quantitative Data

The data were collected directly from respondents through a structured online survey questionnaire. This suggests that the data are numerical or categorical, designed for statistical analysis.

3.3. Data Collection Method

An online structured survey questionnaire comprising closed-ended questions, such as Likert scale, multiple-choice, and numeric response items, was used to collect data for this research. These questions were designed to generate quantitative data suitable for statistical testing. A total of 242 valid responses were collected.

The sampling strategy employed was purposive sampling. Inclusion criteria required respondents to be owners or managers of small businesses.

The nonparametric Mann-Whitney Rank test was used through SPSS to analyse the quantitative data. In addition to the Mann-Whitney Rank test, Cronbach's test was performed to check the reliability and validity of the questionnaires as a research instrument.

3.4. Analysis Techniques

Data analysis was conducted using SPSS. Cronbach's alpha was applied to assess the reliability and validity of the survey instrument. The nonparametric Kolmogorov-Smirnov test was employed to evaluate distribution assumptions. Finally, the Mann-Whitney Rank test was used to test the null hypotheses and examine group differences.

3.5. Additional Data Visualisation

Word Cloud: A word cloud is employed as a visual representation to highlight the

most frequently occurring themes within responses to open-ended questions. This method facilitates the identification of key patterns and recurring concepts in qualitative data, allowing for a more intuitive and immediate understanding of prevalent themes.

Excel-generated Graphs: Graphs, such as bar charts, are utilised to summarise the data, illustrate trends and display relationships between variables.

4. Results and Discussions

The results are presented in three sections. The first section presents the responses to three demographic questions: 1) What is your industry? 2) What method of cashless payments is mainly used by your customers? And 3) What percentage of your business transactions are cashless per day? These vital questions still need to be addressed in the current literature. The vitality of information on the type of industry lies in contextual relevance, ensuring that the information is relevant and applicable to specific sectors. Knowing the method of cashless payments is mainly used by customers aids the business in managing the cost of cashless payments, and it can improve the efficiency of the operations. Understating the percentage of business transactions that are cashless per day can provide insight into customer preferences and the trend toward cashless transactions.

The second section presents the responses to the open-ended question of what challenges businesses have faced in transitioning to cashless transactions. This essential information can assist businesses in making informed decisions in operating in cashless societies.

The third section presents the quantitative analysis and results. The nonparametric Mann-Whitney Rank test was used through SPSS to analyse the quantitative data. In addition to the Mann-Whitney Rank test, Cronbach's test was performed to check the reliability and validity of the questionnaires as a research instrument.

The word cloud shown in Figure 1 was generated for the responses to the industry-type question. A word cloud is a visual representation of the frequency and/or importance of the words. The large and bold words signify the frequency of the words used in responses.

Figure 1. Word Cloud: Presenting responses to question on the type of industry.

The word cloud indicates that the participants in this research belong to various industries. Education, technology, finance, and construction are prominent industries in the participants' responses in this research. These findings may not be generalised to a broader population of small businesses due to the study's limitations discussed in conclusion section. However, according to the word-cloud, the traditional industry, such as education, and the contemporary industry, such as technology, are both dealing with cashless societies.

Figure 2 shows the frequency of different payment methods used by customers. Debit and credit cards are the most popular methods of cashless payments, followed by bank transfers and other methods. The cryptocurrency method is the least used method of cashless payments. The results indicate that consumers prefer to use proven forms of cashless payments, such as debit and credit cards, instead of newer forms, such as cryptocurrency.

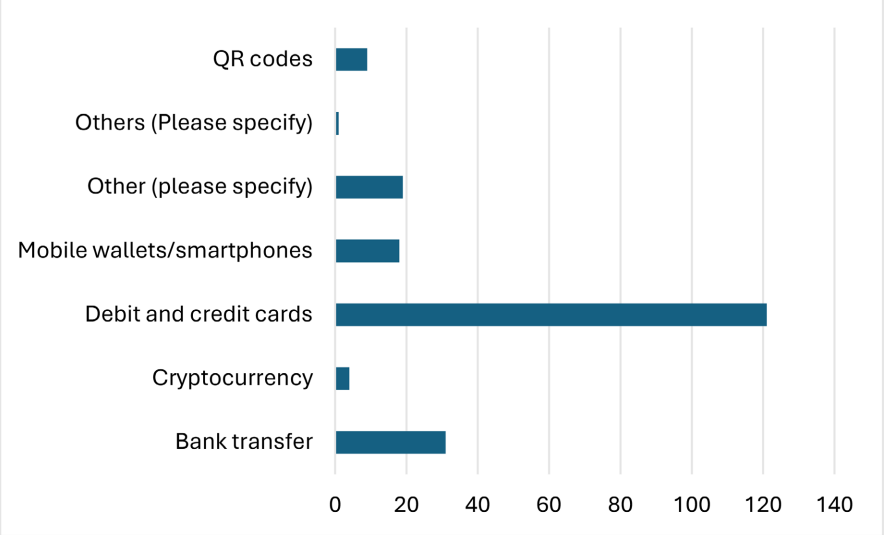

Figure 2. Frequency of different payment methods used by customers.

Figure 3 shows the percentage distribution of cashless payments per day made by customers. The percentage range of cashless payments made by customers grows, demonstrating the trend towards adoption of cashless payments.

The question of the challenges faced by businesses in adopting cashless payments is a central focus of this study. Responses from small business owners align with the pros and cons of cashless payments identified in the literature. For instance, businesses report issues such as transaction costs, technical difficulties in processing cashless payments, customer preferences for using cash, and cybersecurity concerns (Chattopadhyay, Gulati, & Bose, 2018; Kitamura & Kitamura, 2022; Noman et al., 2023; Pritchard, 2022; Rivera, 2019).

While cashless transactions can reduce costs by eliminating the handling of physical currency, transitioning to such systems also improves security and operational efficiency while providing greater convenience for both businesses and consumers (Deora, 2018; Ekpeyong, 2023; Kitamura & Kitamura, 2022; Noman et

al., 2023; Pritchard, 2022; Rahman, Ismail, Bahri, & Rahman, 2022; Santana, 2019; Thoughtlab, 2018).

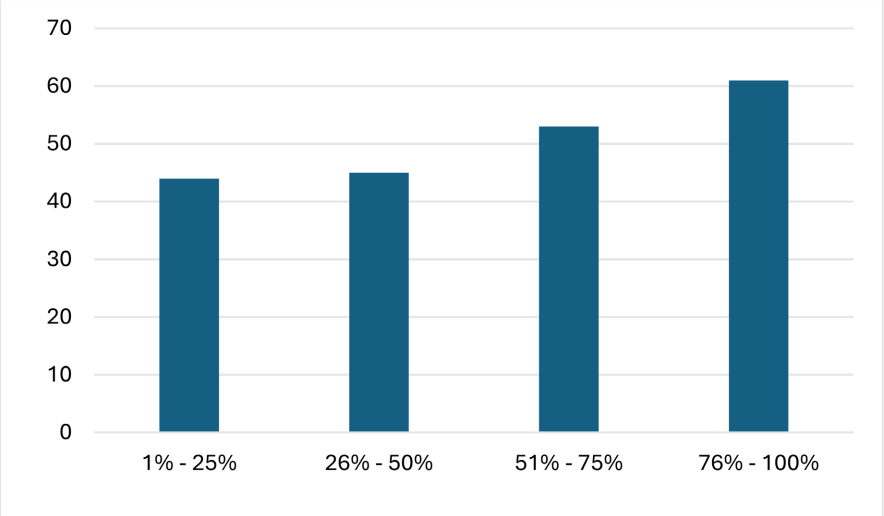

Figure 3. Percentage of cashless payments per day.

A Cronbach's alpha test was conducted to assess the reliability and validity of the questionnaire used as a research instrument. The results, shown in **Table 1**, indicate a Cronbach's alpha of 0.877, which exceeds the acceptable threshold of 0.70, confirming that the survey instrument is reliable and valid (Tavakol & Dennick, 2011).

Table 1. Results of Cronbach's test.

Metric	**Value**
Sum of the item variance	7.440054033
Var of total score	27.65988935
Cronbach's alpha	**0.877219792**

The Kolmogorov-Smirnov test was conducted to assess the normality of the data. The significance value (p = .000) for each hypothesis is less than the alpha level of .05, indicating that the data are highly non-normal (Centre for Multilevel Modelling, 2018). **Table 2** presents the results of the Kolmogorov-Smirnov tests for each hypothesis.

Due to the significant deviation from normality indicated by the Kolmogorov-Smirnov test, the Mann-Whitney test is deemed the suitable statistical method for this research.

Table 3 shows the results of the Mann-Whitney test for the six sub-hypotheses.

For Hypothesis 1 (H1), the significance value (p = .001) is less than the alpha

Table 2. Results of Kolmogorov-Smirnov tests.

Hypothesis	Kolmogorov-Smirnov Statistic	Degrees of Freedom (df)	p-value (Sig.)
H_1	0.227	240	< .001
H_2	0.203	240	< .001
H_3	0.220	240	< .001
H_4	0.222	240	< .001
H_5	0.246	240	< .001
H_6	0.245	240	< .001

Table 3. The results of the Mann-Whitney test for the six sub-hypotheses.

Hypothesis 1		
	p value	Test Results
(H1): Cashless societies increase transaction efficiency for small businesses.	(p =.001) <.05	Accept ✓
(H0): Cashless societies do not increase transaction efficiency for small businesses.		Reject
Hypothesis 2		
(H1): Cashless societies increase customer satisfaction.	(p =.001) <.05	Accept ✓
(H0): Cashless societies do not increase customer satisfaction.		Reject
Hypothesis 3		
(H1): Cashless societies do not increase costs associated with cashless transactions.	(p =.001) <.05	Accept ✓
(H0): Cashless societies increase costs associated with cashless transactions.		Reject
Hypothesis 4		
(H1): Cashless societies increase sales.	(p =.001) <.05	Accept ✓
(H0): Cashless societies do not increase sales.		Reject
Hypothesis 5		
(H1): Small businesses are technologically prepared for cashless transactions.	(p =.001) <.05	Accept ✓
(H0): Small businesses are not technologically prepared for cashless transactions.		Reject
Hypothesis 6		
(H1): Laws governing cashless transactions support small businesses.	(p =.001) <.05	Accept ✓
(H0): Laws governing cashless transactions do not support small businesses.		Reject

level of .05, indicating that H1 is supported (Centre for Multilevel Modelling, 2018). This result suggests that transitioning to cashless systems can significantly reduce operational costs for small businesses and enhance their efficiency, thereby presenting a promising opportunity for the industry.

For H2, the significant value ($p = .001$) is less than a significant (α) level of .05, then alternative hypothesis 1 is accepted, as shown in the following table. This means that customers may prefer cashless transactions and find it a convenient way of paying at small businesses.

For H3, the significant value ($p = .001$) is less than a significant (α) level of .05, then alternative hypothesis 1 is accepted, as shown in the following table. This means that the benefits of transitioning to cashless for small businesses may outweigh any additional costs. However, this finding requires careful interpretation. While the statistical analysis supports the claim that cashless societies do not increase costs, the qualitative data highlights "high fees" as one of the most prominent challenges identified by small business owners. This apparent contradiction suggests that, although direct transaction fees are a burden, participants may perceive the broader benefits of cashless adoption—such as operational efficiency, faster transactions, improved security, and increased customer satisfaction—as sufficient to compensate for these costs. In other words, the net effect of going cashless is experienced as positive overall, even though the specific issue of high transaction fees remains a significant concern. Addressing this nuance is important, as it indicates that businesses evaluate costs not in isolation but relative to the perceived advantages gained from the transition. For H4, the significant value ($p = .001$) is less than a significant (α) level of .05, the alternative hypothesis 1 is accepted, as shown in the following table. This suggests that consumer spending is likely to surge due to the convenience of cashless transactions, potentially boosting the revenue of small businesses and paving the way for a prosperous future.

For H5, the significant value ($p = .001$) is less than a significant (α) level of .05, then the alternative hypothesis 1 is accepted as shown in the following table. This indicates that many small businesses are already equipped with the necessary technology to facilitate cashless transactions, underscoring the industry's preparedness for the transition and its potential for swift adoption.

For H6, the significant value ($p = .001$) is less than a significant (α) level of .05, then alternative hypothesis 1 is accepted, as shown in the following table. This means that laws governing cashless transactions are in place and actively support small businesses, providing a secure legal framework for the transition.

Table 4 summarizes the main hypothesis. Based on the above test, the alternative hypothesis is accepted. This finding indicates that in a cashless society, small businesses will benefit from increased business efficiency, customer satisfaction, increased revenue, and government support while maintaining manageable costs.

To gain insight into the challenges small businesses face in transitioning to cashless transactions, the participants were asked to describe their challenges.

Table 4. The results of the Mann-Whitney test for the main hypothesis.

Main hypothesis	
(H1): Small businesses operating in cashless societies are better off.	Accept ✓
(H0): Small businesses operating in cashless societies are not better off.	Reject

Thirty-seven participants answered this question. According to free sentiment analysis, too, nine participants made positive statements, and 28 participants made negative statements. These statements reflect small business owners' experience transitioning to a cashless society. 28 out of 37 statements are negative, focusing on fees, technical problems, and compatibility challenges. The number of positive and negative counts was converted to percentiles.

Despite being fewer in number, the positive responses underscore the potential benefits of cashless transactions. These benefits, such as convenience, increased customer satisfaction, and improved transaction speed, not only suggest areas for further exploration but also inspire optimism about the future of small businesses. These benefits signal promising opportunities that could be harnessed with the right policies and support systems in place.

The fact that 28 out of 37 participants expressed negative experiences underscores the significant struggles that small businesses face during this transition. This insight is crucial for policymakers and stakeholders to understand and address the challenges these businesses are dealing with. Common challenges identified are discussed below.

High Fees: Many cashless transaction systems, such as credit card payments or mobile payment platforms, come with transaction fees. For small businesses operating on thin profit margins, these fees can significantly impact their bottom line.

Technical Problems: Issues like unstable internet connectivity, hardware malfunctions, or lack of access to reliable point-of-sale (POS) systems not only add operational complexity but also underscore the need for better support for small businesses in this transition.

Compatibility Challenges: Smaller businesses often struggle to integrate various cashless payment platforms with their existing systems. This may result in inefficiencies or the need to invest in additional technology.

The findings reflect that small businesses generally see the transition to a cashless society as burdensome than beneficial. This may indicate insufficient infrastructure or support tailored to their needs. Furthermore, these barriers impact small businesses' operational efficiency and threaten their financial viability, particularly for those operating on slim profit margins.

Table 5 shows the positive and negative statements made by the participants and their corresponding percentages.

Table 5. Positive and negative statements made by the participants and their corresponding percentages.

Positive 25%	**Positive Statements (Verbatim)** 1. "Cashless transactions came in without much hassle, went well with us". 2. "Cashless suits our business well since they are larger payments". 3. "It has not encountered any challenges, as cashless transactions are favorable to everyone". 4. "My Business transitioned perfectly". 5. "It was smoothly and gradually". 6. "Not many...more sales with cashless. Hardly anyone pays with cash anymore". 7. "The cashless transactions came in handy for our technology industry". 8. "The more we allow customers to go cashless the better it gets for the entire system".
Negative 75%	**Negative Statements (Verbatim)** 1. "wireless network issues". 2. "No tips can be received via cashless payments". 3. "to many different kinds of banks that aren't compatible with each other". 4. "Card readers have problem reading and we do not have tap to pay tips". 5. "There are more fees depending on banks". 6. "At first incorporating it wasn't easy for customers". 7. "We had a lot of things to put in place to effect the cashless transactions". 8. "people who prefer cash transactions and don't use any form of cashless". 9. "It is costly". 10. "cyber fraud and security related issues". 11. "Business may struggle with technical aspects of technical transactions". 12. "Installing payment devices at all our service centers". 13. "It has faced limited internet connectivity". 14. "customer reluctance to adopt digital payments, requiring significant investments in infrastructure and education". 15. "Different cashless pay apps and customs. It's not compatible". 16. "network failure". 17. "The reliability of the transaction companies". 18. "it is sometimes get risky". 19. "People not having their card or us not having tap to pay" 20. "Fees. Fees. And fees". 21. "delayed alerts". 22. "the fees to process cashless payments". 23. "some customers prefer cash". 24. "Some people don't use anything except cash so we may not

A noteworthy finding in this study is the discrepancy between the quantitative and qualitative results. On the one hand, all six quantitative hypotheses were supported, reinforcing the idea that cashless transactions enhance efficiency, revenue,

satisfaction, and preparedness. On the other hand, the majority of qualitative comments 28 out of 37 were negative, stressing high transaction fees, technical barriers, and integration challenges.

One explanation for this divergence is the nature of structured versus open-ended questioning. In structured survey items, participants are more likely to agree with general statements about efficiency, convenience, and satisfaction, particularly as these reflect perceived long-term benefits. However, when asked to describe their experiences in their own words, participants focused more on the immediate, tangible difficulties they encounter in daily operations. This suggests that while business owners recognize the theoretical advantages of cashless systems, the practical challenges weigh more heavily on their lived experiences.

This duality highlights the complexity of transitioning to cashless systems. Small businesses may conceptually affirm the benefits but remain constrained by real-world barriers that hinder their ability to fully realize those benefits. The implication is that policymakers and financial service providers must not only promote the macro-level advantages of cashless economies but also directly address micro-level operational issues, such as transaction costs, infrastructure support, and system integration, to align business owners' perceptions with their lived realities.

5. Conclusion & Future Directions

This study was designed to determine the effect of a cashless society on the operation of small businesses, as small businesses play a vital role in contributing to the gross domestic product (GDP). The findings suggest that in a cashless society, small businesses can have the advantages of operational efficiency, higher customer satisfaction resulting from convenient cashless payments, increased revenue resulting from increased volume of transactions, government support, and keeping additional costs under control. These results suggest that small businesses operating in cashless societies are better off. The empirical findings in this study provide a new understanding of how small business owners perceive cashless societies. The most important limitation of this study is that it covered small businesses in the context of physical existence, not online. This research has thrown up many questions that need further investigation. For example, how do cashless societies impact the operation of medium to large and online businesses?

6. Recommendations

This study concludes with the following recommendations for Small Businesses:

Adopt Cashless Payment Systems: Small business owners should prioritize integrating cashless payment systems to enhance operational efficiency and meet customer expectations for convenience.

Leverage Government Support: Businesses should actively seek out and utilize government incentives, grants, and training programs to support the transition to cashless operations.

Monitor Financial Performance: Regularly assess the impact of cashless transactions on revenue and operational costs to identify areas for further optimization.

For Small Businesses:

- Adopt Cashless Payment Systems: Small business owners should prioritize integrating cashless payment systems to enhance operational efficiency and meet customer expectations for convenience. When choosing a system, businesses should compare providers to minimize transaction fees and select platforms with strong reliability records.
- Leverage Government Support: Businesses should actively seek out and utilize government incentives, grants, and training programs to support the transition to cashless operations, particularly those aimed at reducing the financial burden of high transaction costs.
- Monitor Financial Performance: Regularly assess the impact of cashless transactions on revenue, transaction fees, and operational costs to identify areas for further optimization. Businesses should also track technical disruptions or downtime to evaluate provider performance.

For Policymakers and Governments:

- Promote Awareness: Governments should launch awareness campaigns to educate small business owners about the benefits of adopting cashless systems, while also highlighting strategies for reducing costs and mitigating risks.
- Reduce Financial Burdens: Offer subsidies, tax breaks, or capped transaction fees in collaboration with payment providers to help small businesses manage high transaction costs.
- Strengthen Reliability and Inclusivity: Invest in improving internet connectivity and system infrastructure to minimize technical unreliability, particularly in rural or underserved areas. Policymakers should also establish standards for interoperability across different payment platforms to reduce compatibility challenges.

For Technology Providers:

- Develop Cost-Effective Solutions: Providers should introduce transparent, tiered pricing models with lower transaction fees for small businesses, making adoption financially sustainable.
- Enhance System Reliability: Invest in infrastructure to ensure consistent uptime and seamless transaction processing. Regular system testing and rapid-response support mechanisms should be implemented to minimize disruptions.
- Ensure Compatibility and Integration: Design payment systems that integrate smoothly with commonly used point-of-sale and accounting platforms to prevent compatibility problems.
- Offer Training and Support: Provide ongoing training and responsive customer support tailored to small businesses, helping them manage both technical and financial aspects of cashless operations.

For Researchers:

Conduct further studies to understand the challenges and opportunities cashless societies present to online businesses, medium-sized businesses, and large enterprises.

Investigate the socio-economic impacts of cashless transitions in different regional and cultural contexts to develop more inclusive policies and strategies.

Explore customer perspectives to complement this study's business-focused findings and offer a more comprehensive understanding of cashless societies.

These recommendations aim to guide key stakeholders in maximizing the benefits of cashless societies for small businesses while addressing potential challenges.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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