

# The impact of cashless societies on business and society

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## **ABSTRACT,**

*This thesis aims to examine the impact of cashless societies on businesses and society. To achieve this a literature review has been conducted to explore the benefits, drawbacks, privacy/security risks, and financial inclusion implications associated with cashless systems. The findings revealed that cashless systems offer several advantages such as increased efficiency, cost savings, improved security, and customer convenience for businesses. In society, cashless systems help to promote financial inclusion, reduce cash-related crimes, and drive technological advancements. However, privacy risks, digital literacy barriers, and access disparities pose challenges.*

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## **Keywords**

Digital finance, cashless society, benefits, drawbacks, security risks, and privacy risks

## 1.1 INTRODUCTION

With the rise of e-commerce and card payments in the last few decades, many countries are now moving increasingly towards cashless transactions, with electronic payment systems rapidly replacing traditional cash-based transactions. This trend has been accelerated by technological advancements by the increasing use of smartphones and other mobile devices, like smartwatches, and the growing popularity of e-commerce. This was also further accelerated during the COVID-19 crisis. Since many people had to move from shopping in-store to ordering food, household products, and clothing online because of the COVID-19 regulations such as having to quarantine. Also, people increasingly adopted contactless payments to avoid the spread of the virus. This transition towards a cashless society has significant implications for businesses and society, both in terms of benefits and drawbacks (Negreiro, 2020).

Past research has shown that cashless transactions offer a variety of benefits such as increased efficiency, convenience, and security. For example, electronic payments eliminate the need for cash handling, reducing the costs and risks associated with cash management, such as theft and counterfeit currencies. Moreover, electronic payments provide a faster and more convenient way for businesses and consumers to transact, reducing waiting times and enabling transactions from anywhere, where there is an internet connection. (VISA, 2019)

However, this transition towards cashless societies also raises concerns about financial exclusion, privacy, and potential security risks. Since not everyone has access to a functioning digital infrastructure that is necessary for electronic payments. And some people also may prefer cash for several reasons, some of them being anonymity and budgeting. Furthermore, electronic payments are vulnerable to cyber-attacks and data breaches, which can compromise the privacy and security of users. (Demirguc-Kunt, Klapper, Singer, & Ansar, 2018)

The goal of this research proposal is to investigate “What is the impact of cashless societies on business and society?” Specifically, it aims to address the following sub-research questions:

1. What are the benefits and drawbacks of cashless societies for businesses and consumers?
2. What are the countries and societies that are moving towards cashless?
3. What are the privacy and security risks associated with electronic payments in a cashless society?
4. How does the transition toward a cashless society affect financial inclusion and accessibility?

The thesis will be organized as follows. The Introduction will supply a general outline of the subject and will provide the research questions. Next, will be the methodology of this thesis which will present the design of the research, meaning the literature collection, literature analysis, and filters. Thirdly, the findings of this thesis will be a literature review, which will be structured by using the sub-research questions as headings. Furthermore, the discussion portion of this thesis will be divided into three points, synthesis of the literature, answering the research question, and practical and academic implications. Lastly, there will be a conclusion.

## 2. CONCEPTUAL FRAMEWORK

Key theories that are used to analyze results from the systematic literature review and that can be applied to help answer the research questions and develop the hypotheses are:

**Technology acceptance model (TAM):** This theory can be used to help explain the factors that influence the adoption and usage

of electronic payments by businesses and consumers. TAM suggests that perceived usefulness, perceived ease of use, and attitudes toward technology are key aspects of if technology will be adopted (Davis, 1989). So, by examining these factors, and conceptualizing it as a cashless society, hypotheses could be developed about the benefits and drawbacks of electronic payments. The hypothesis is the perceived usefulness, perceived ease of use, and attitudes towards technology that positively influence the adoption and usage of electronic payments by businesses and consumers in a cashless society. This hypothesis suggests that the determinants of whether businesses and consumers would adopt and use electronic payments in a cashless society are perceived usefulness, perceived ease of use, and attitudes toward technology. By putting this theory to the test, researchers can learn more about what influences the adoption and use of electronic payments and how to encourage their use to move closer to a cashless society.

**Financial inclusion theories:** These theories could be used to understand how the transition towards cashless societies affects financial inclusion and accessibility. Financial theories suggest that access to financial services is a key driver of economic growth and poverty reduction (Demirguc-Kunt, Klapper, Singer, & Van Oudheusden, 2014). Financial inclusion theories have been used in studies to investigate the impact of digital financial services on financial inclusion. One of them is “Digital financial inclusion: A gateway to sustainable development” (Tay, Tai, & Tan, 2022). According to the study, the pandemic has expanded the use of digital financial services but has also presented difficulties for some nations. To investigate global digital financial inclusion, a thorough literature study was done. The findings demonstrate that emerging nations, especially those in Asia, are embracing and enhancing digital financial inclusion to fight poverty. However, there continues to be a gap in the availability and use of digital financial services among various groups, including those based on gender, wealth, and urban/rural location. To facilitate the easy adoption of digital financial inclusion across countries, the report makes recommendations for improving digital infrastructure, streamlining banking procedures, and offering financial education. Possible hypotheses about the potential benefits and drawbacks of electronic payments for marginalized communities could be, the transition towards cashless societies positively affects financial inclusion and accessibility by increasing access to digital financial services, which in turn drives economic growth and reduces poverty. This hypothesis suggests that the transition towards cashless societies can have a positive impact on financial inclusion and accessibility, as it enables wider access to digital financial services. By putting this theory to the test, it may be possible to find any obstacles or hurdles that need to be removed to make the transition to cashless societies inclusive and advantageous for everyone.

**Privacy and security theories:** These theories could be used to explore privacy and security risks that are associated with electronic payment systems. The privacy calculus theory suggests that individuals weigh the costs and benefits of sharing personal information to make decisions about privacy (Mini, 2017). Meanwhile, the risk compensation theory suggests that individuals may engage in riskier behavior when they feel protected by security measures (Wilde, 1998). Therefore, both theories can be used to address one of the potential drawbacks of cashless payment alternatives – privacy and security risks. The privacy calculus theory, as already mentioned above, can be utilized to examine how individuals perceive the trade-off between sharing personal information and the benefits of using cashless payment alternatives. It enables us to understand how privacy concerns might affect the adoption and usage of

electronic payment systems by consumers and businesses. On the other hand, the risk compensation theory can be used to investigate the potential consequences of implementing security measures for cashless payment alternatives. Since, as already mentioned, it suggests that individuals may engage in riskier behavior when they feel protected by security measures, which could lead to new security threats or vulnerabilities. Therefore, it is important to examine how security measures are implemented and their effectiveness in mitigating risks associated with cashless payment alternatives. Overall, privacy and security theories can provide valuable insights into the potential risks and benefits of cashless alternatives, which can inform policymakers and stakeholders in developing strategies to promote the adoption and usage of cashless alternatives while ensuring privacy and security protection for users.

### 3. METHODOLOGY AND DATA

To answer the research question, a systematic literature review will be conducted on cashless societies, electronic payments, and the impact of technology on businesses and society. This will serve as a theoretical framework for the research and will aid in identifying gaps in existing research. Moreover, Scopus will be used as a database, and some of the queries include: "Benefits" (AND) "drawbacks" (AND)"cashless society", "financial inclusion" (AND) "cashless societies", "privacy risks" AND "cashless societies". Additional filters included the exclusion of books and reports and will be mostly using research papers. However, if the number of findings for a topic is insufficient, books and reports will also be used. Also, it will focus on more recent papers from the last 5 years. Furthermore, a thematic analysis will be conducted of the data that was found in the systematic literature review and provide insights to answer the proposed research question.

### 4. FINDINGS

This section will be divided into three subsections: year-wise and source-wise statistics, thematic reporting, and the interrelation/association among concepts. Each subsection will help to gather valuable insights into the findings obtained from the analysis conducted in this paper.

Figure 1 helps to illustrate the selection process for relevant data that can help to answer this paper’s research question.

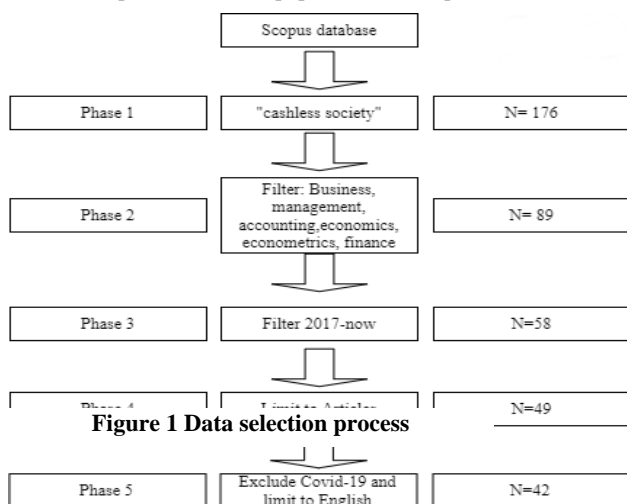


Figure 1 Data selection process

#### 4.1 Year-wise and field-wise stats

In this subsection, the distribution of papers over the years, as well as the list of journals in which the papers were published, will be discussed.

Figure 2 shows the year-wise distribution of data on Scopus. There we can see that the most data for a “cashless society” was

published in the year 2022. This could be because nowadays more and more people opt to use cashless alternatives in their day-to-day life.

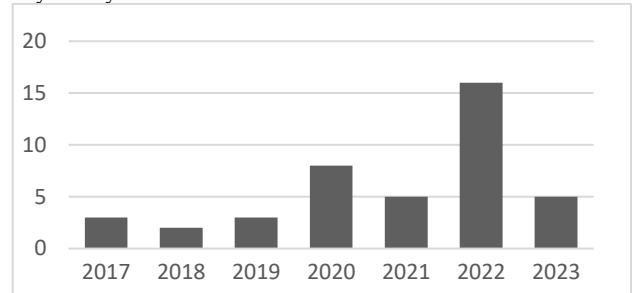


Figure 2 Year-wise frequency of publication

Figure 3 shows how the data available is distributed by relevant fields, which are Business, Management and Accounting and Economics, Econometrics, and Finance. There we can see that most of the data come from Business, Management, and Accounting. However, among the 42 papers that were left after the filtering process, only 12 relevant papers were used. These have been chosen based on their titles and abstract.

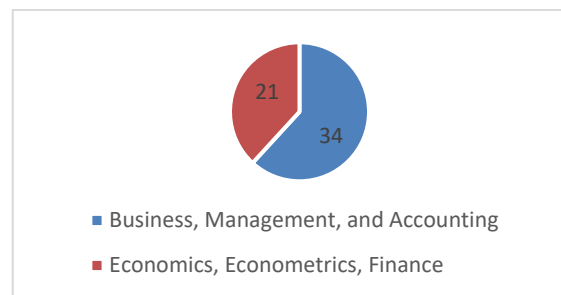


Figure 3 Frequency of publication per Field

#### 4.2 Studies associated with this thesis topic.

Table 1 in the appendix presents a summary of the papers that are closely related to the topics investigated in this thesis. First, it summarizes the studies that provide recommendations for the adoption of cashless societies. Second it highlights what countries/societies have adopted a more cashless approach. Third, it shows which studies accounted for privacy and security issues. Lastly, it demonstrates how these studies take into consideration factors such as inclusion and accessibility in the digitalization of the finance sector. Furthermore, these papers will be further discussed and summarized in the next chapter, to help answer the research questions.

## 5. DISCUSSION

### 5.1 Synthesis of Literature

#### 5.1.1 What benefits and drawbacks of cashless societies for businesses and consumers?

The transition towards a cashless society has gained momentum globally, including in Malaysia and India, driven by technological advancements and evolving consumer preferences. Cashless societies offer numerous potential benefits, such as convenience, cost savings, and improved security. These benefits align with the Technology Acceptance Model (TAM), which suggests that perceived usefulness and perceived ease of use are key factors influencing individuals’ acceptance and adoption of technology (Davis, 1989).

The paper “Malaysia towards cashless society” (Kadar, 2019) examines Malaysia’s progress toward becoming a cashless

society. Malaysia is among several countries globally that are actively transitioning towards a cashless society, driven by technological advancements and changes in consumer preferences. The convenience of cashless transactions is one of the main benefits identified, as it allows for quick and easy payments without the need to carry physical currency. This aligns with the concept of the perceived usefulness of TAM, as individuals perceive cashless transactions as a more efficient way of conducting financial activities.

Additionally, the cost savings associated with cashless transactions are another significant benefit mentioned by the author. By eliminating the need for physical cash handling, businesses can reduce expenses related to cash storage, transportation, and security. Consumers can also save on transaction costs and avoid the hassle of handling change. These cost-related benefits contribute to the perceived usefulness of cashless systems, as individuals perceive them as more economical.

Improved security is another advantage mentioned in the literature. Cashless transactions provide a digital trail that can be tracked, reducing the risk of theft, and enabling easier detection of fraudulent activities. This again aligns with the concept of perceived usefulness, as individuals perceive cashless transactions as more secure compared to cash-based transactions.

However, the transition towards cashless societies also presents challenges that need to be addressed. Privacy and security concerns are among the main drawbacks highlighted in the literature. Individuals may be wary of sharing personal and financial information in a digital environment, raising concerns about data breaches and identity theft. These concerns can hinder individuals' perceived usefulness and acceptance of cashless systems, as they may perceive them as less secure or invasive of their privacy.

Furthermore, digital literacy and access to financial services have been mentioned as additional challenges by the author. TAM emphasizes the importance of perceived ease of use in technology acceptance. If individuals lack the necessary skills or access to digital infrastructure, such as the Internet or electronic payment systems, they may find it difficult to adopt cashless systems. This can hinder the overall acceptance and adoption of cashless technologies, especially in rural and underserved areas.

Furthermore, the paper "Benefits, Challenges and Modes in Cashless Economy in India" by (Shireesha, 2022) names multiple benefits and challenges of a cashless economy in India. The benefits include increased transparency, inclusion in the financial system, reduced maintenance costs, increased income for the government, reduced transaction costs, reduced opportunity for tax evasion and illegal activities, convenience, improved tracking of expenses, reduced bureaucracy and red tape, improved hygiene, and reduced cost of operating ATMs (Shireesha, 2022). The challenges mentioned are language disparity, low literacy rates, and a lack of banks in villages as obstacles to widespread adoption. These challenges can also influence individuals' perceived ease of use, as they may find it difficult to navigate and understand cashless systems due to language barriers or limited literacy skills.

Moreover, the article raises concerns about the state of cyber security in India, such as the continued use of outdated operating systems in ATMs. This highlights the importance of addressing technological infrastructure and security measures to enhance individuals' perceived usefulness and trust in cashless systems.

In summary, the synthesis of the literature indicates that cashless societies offer various benefits, including convenience, cost savings, and improved security. These benefits align with the TAM's concepts of perceived usefulness and ease of use, which are influential factors in individuals' acceptance and adoption of technology. However, challenges such as privacy and security concerns, digital literacy, and access to financial services need to be addressed to ensure widespread adoption and acceptance of cashless systems. Addressing these challenges will contribute to individuals' perceived usefulness and ease of use of cashless technologies, facilitating their integration into businesses and daily life.

### *5.1.2 Countries and societies ~~are~~ moving towards being cashless.*

More and more countries are moving towards becoming cashless societies. One big example is the country of Sweden. In the book "Building a Cashless Society: The Swedish Route to the Future of cash payments" by (Arvidsson, 2019) it is described that Sweden is one of the top countries when it comes to non-cash transactions. Overtaking the United States as the country where the most noncash transactions per capita are made (Arvidsson, 2019). In 2016, Sweden reported 461.5 non-cash transactions per resident, compared to the previous leader, the United States, which recorded 459.6 transactions (Arvidsson, 2019).

Furthermore, more and more developing countries are also moving towards becoming cashless. One example is Malaysia. The Paper "Malaysia towards cashless society" (Kadar, 2019), where the paper describes "how a cashless evolution is on its way in Asia" (Kadar, 2019). It indicates that by 2020, developing Asia would account for 30% of all cashless transactions, which is twice as much as for the rest of the world. However, most transactions in many Asian countries still take place in cash. One of the nations that still conducts transactions in cash is Malaysia. In Malaysia, cash is still king. The number of cash-based transactions in 2017 is significantly lower than it was in 2007, as Malaysia's economy gradually adopts the cashless system (Kadar, 2019).

### *5.1.3 Privacy and security risks associated with electronic payments in a cashless society.*

Technological developments and alterations in consumer tastes have sped up the shift to a cashless society. As electronic payment systems proliferate, worries about their potential for privacy and security breaches are on the rise. In a cashless society, electronic payments pose privacy and security problems. This literature review will investigate these risks, highlighting the difficulties and potential solutions.

Consumers' financial transactions, personal information, and location data are just a few of the many pieces of information that electronic payment systems gather about them. Because third-party payment processors are frequently given access to this data, privacy issues may arise. For instance, a study (Turow, 2015) discovered that many consumers are unaware of the extent to which payment processors collect and disclose their personal information. The survey also discovered that consumers frequently have no control over how these processors utilize their personal information, which raises worries about privacy infringement. This highlights the need for stricter data protection and privacy rules. Transparency and disclosure requirements can ensure that consumers have control over their personal information and understand how it is utilized.

The biggest threat to e-commerce comes from programs like viruses, worms, and Trojan horses that are launched against client computers because they can circumvent or undermine most of the authentication and approval methods used in an e-

commerce exchange (Khan, 2019). Making the theme of cybersecurity an important topic for cashless societies.

In a cashless world, reducing privacy and security issues presents several difficulties. For instance, consumers frequently lack knowledge and education regarding the dangers of using electronic payments. Additionally, there is sometimes little governmental control of payment processors, which increases the risk of security and privacy infractions.

Several potential remedies have been put forth to reduce these dangers. For instance, some experts have advocated for stricter data protection and privacy rules that would oblige payment processors to disclose more information about how firms gather and use consumer data. Additionally, to assist customers in defending themselves against privacy and security risks, some experts have recommended expanded consumer education and awareness initiatives. Also, some countries have introduced financial privacy laws, like the Financial Modernization Act of 1999, from the United States (Federal Trade Commission, n.d.).

In summary, privacy and security theories offer valuable insights into the risks and benefits of cashless alternatives. By understanding individuals' perceptions of privacy risks and applying effective security measures, policymakers and stakeholders can promote the adoption and usage of cashless payment systems while ensuring privacy and security protection for users. Stricter regulations, transparency, education initiatives, and governmental control are potential solutions to address privacy and security concerns in a cashless society.

#### *5.1.4 Financial inclusion and accessibility.*

In the discussion of a cashless society, financial accessibility and inclusion have taken center stage. Financial inclusion theories highlight the significance of access to financial services for economic growth and poverty reduction (Demirguc-Kunt et al., 2014). The study "Digital financial inclusion: A Gateway to sustainable development" by (Tay, Tai, & Tan, 2022) emphasizes the importance of digital financial services in promoting financial inclusion.

Financial inclusion can be improved by using electronic payments, specifically mobile payments, especially in developing nations where access to traditional banking services is limited (Mahbubur, 2018). Electronic payments offer financial services to those who are unable to access traditional banking services for a variety of reasons, such as location, a lack of documents, or low income (Demirguc-Kunt, Klapper, Singer, & Van Oudheusden, 2014). This is one of the key benefits of electronic payments. By enabling access to financial services via a mobile phone, which is frequently the only device available to many individuals in developing countries, mobile payments have been found to enhance financial inclusion (Mahbubur, 2018). Additionally, it has been demonstrated that mobile payments minimize the cost of financial services, increasing their accessibility to people with lower incomes (Mahbubur, 2018).

Electronic payments, however, raise the possibility that people without access to essential infrastructure or technology could become even more financially excluded (CNAAN, 2021). Additionally, some people could be reluctant to accept electronic payments because they have privacy and security concerns. Due to this, some groups may be left behind in the transition to a cashless society, resulting in a digital gap.

Numerous initiatives have been put out to improve financial accessibility and inclusion in a cashless society to address these problems. For instance, to improve access to financial services, the World Bank has argued for the development of digital identification systems (Demirguc-Kunt, Klapper, Singer, & Ansar, 2017). Additionally, governments and financial

institutions have taken steps to advance financial literacy and widen access to infrastructure and technology (Ramkumar, 2017).

Overall, it is crucial to make sure that electronic payments do not add to or exacerbate already-existing inequities, even while they have the potential to promote financial inclusion and accessibility. To guarantee that everyone has access to the required technology and infrastructure and that issues with privacy and security are taken care of governments, financial institutions, and technology suppliers must collaborate.

In summary, the application of financial inclusion theories and the information provided by the literature review, suggests that the transition towards cashless societies can positively impact financial inclusion and accessibility. Electronic payments, particularly mobile payments, offer financial services to individuals who face barriers to accessing traditional banking services. However, challenges such as the digital divide and privacy/security concerns must be addressed. Initiatives such as digital identification systems, financial literacy programs, and collaboration among stakeholders are essential to ensure that the transition to cashless societies is inclusive and advantageous for all individuals, regardless of their background or circumstances.

## **5.2 Answering the research question**

To answer the research question and sub-questions, a literature review was conducted on papers closely related to the purpose of this thesis. The synthesis of literature focused on four key areas: The benefits and drawbacks of cashless societies for businesses and consumers, countries and societies that are moving towards becoming cashless, privacy and security risks associated with electronic payments in a cashless society, and the impact of the transition towards a cashless society on financial inclusion and accessibility.

### *5.2.1 Benefits and drawbacks of cashless societies for businesses and consumers:*

The literature review highlights several benefits and drawbacks of cashless societies for businesses and consumers. The benefits include convenience, cost savings, and improved security. Cashless transactions are perceived as more efficient and economical, as they eliminate the need for physical cash handling and reduce transaction costs. Improved security is also mentioned, as cashless transactions provide a digital trail that can be tracked, reducing the risk of theft, and enabling easier detection of fraudulent activities. However, privacy and security concerns, as well as digital literacy and access to financial services, are identified as drawbacks. Privacy concerns arise due to the collection and disclosure of personal information by payment processors, raising worries about data breaches and identity theft. Digital literacy and access to infrastructure can also hinder the adoption of cashless systems, particularly in rural and underserved areas. Moreover, practical implications include the need for stricter data protection and privacy rules, expanded consumer education and awareness initiatives, and addressing digital literacy and access barriers to ensure widespread adoption and acceptance of cashless systems.

### *5.2.2 Countries and societies are moving towards becoming cashless:*

The literature review indicates that various countries and societies are moving towards becoming cashless. Sweden is highlighted as a leading example, with a high number of non-cash transactions per capita. Malaysia is also mentioned, where the transition to a cashless society is gradually taking place. Developing countries are experiencing a shift towards cashless alternatives. Moreover, practical implications include studying the experiences of countries like Sweden and Malaysia to

understand the factors and strategies that facilitate the transition to cashless societies. This can inform policymakers and stakeholders in other countries that are considering or undergoing similar transitions.

*What are the privacy and security risks associated with electronic payments in a cashless society?* The review emphasizes the privacy and security risks associated with electronic payments in a cashless society. Concerns arise from the collection and disclosure of personal information by payment processors, which consumers may have limited control over. Additionally, cybersecurity threats such as viruses, worms, and Trojan horses pose risks to electronic payment systems. Practical implications include the need for stricter data protection and privacy rules that ensure transparency and control over personal information. Strengthening cybersecurity measures and raising awareness among consumers about the risks and precautions related to electronic payments are also important. Furthermore, academic implications include further research on the effectiveness of security measures and the development of strategies to mitigate privacy and security risks in cashless societies.

### *5.2.3 How do financial inclusion and accessibility relate to the transition to cashless societies?*

The literature review highlights the relationship between financial inclusion, accessibility, and the transition to cashless societies. Electronic payments, particularly mobile payments, have the potential to improve financial inclusion by offering access to financial services for individuals who face barriers to traditional banking services. Mobile payments can further lower the cost of financial services and enhance accessibility, especially in developing countries with limited access to infrastructure. However, the digital divide and privacy/security concerns can create a digital gap and exclude certain groups from the benefits of a cashless society. Practical implications include the development of digital identification systems, financial literacy programs, and collaborative efforts among governments, financial institutions, and technology suppliers to ensure that the transition into a cashless society is inclusive and addresses existing inequities. Academic implications include further research on the impact of electronic payments on financial inclusion and the effectiveness of initiatives aimed at improving accessibility in cashless societies.

## **5.3 Practical and academic implications**

The practical implications of this research suggest several actions that can be taken by policymakers, businesses, and stakeholders. For one the strengthening of data protection and privacy regulations. Stricter regulations can ensure that individuals have control over their personal information and understand how it is collected and used by payment processors. Therefore, implementing transparency and disclosure requirements can lead to an enhancement in the trust and confidence of cashless systems. Furthermore, the introduction of initiatives to educate consumers about the benefits, risks, and precautions related to cashless payment systems is essential. Increasing awareness about privacy and security concerns can empower individuals to make informed decisions and protect themselves in cashless societies. Moreover, it is important to address digital literacy and access barriers, to ensure the widespread adoption and acceptance of cashless systems. It is also important to strengthen cybersecurity measures. Continual investment in technology and infrastructure, including the use of up-to-date operating systems, can help mitigate cybersecurity risks. Collaboration among stakeholders, including government agencies, financial institutions, and technology providers, is key for implementing effective security measures.

Additionally, from an academic standpoint, further research can explore specific areas of interest. Which include the effectiveness of security measures. Research can evaluate the effectiveness of various security measures in protecting personal and financial data in cashless systems. This includes exploring encryption technologies, authentication methods, and fraud detection systems. Furthermore, studies can examine the impact of financial inclusion initiatives, such as mobile payment systems on improving access to financial services and reducing financial exclusion. Evaluating the outcomes of these initiatives can provide valuable insights for policymakers and stakeholders. Moreover, conducting comparative studies between countries and societies that have successfully transitioned towards cashless systems and those facing challenges can help identify best practices, success factors, and potential pitfalls. Additionally, trying to understand the factors influencing user acceptance and adoption of cashless technologies is crucial. Research can investigate the role of perceived usefulness, perceived ease of use, trust, and other psychological and social factors influencing individuals' willingness to embrace cashless alternatives. It might also be interesting to see if the age of the individual matters. Lastly, research can also examine the socio-economic impact of cashless societies, including the effects on employment, income distribution, and the informal economy. Understanding these implications can help inform policy decisions and help address potential negative consequences.

## **6. CONCLUSION**

In conclusion, this study has examined the impact of cashless societies on both businesses and society. The increasing adoption of cashless transactions has introduced numerous benefits and challenges that warrant researchers' attention.

To now answer the main research question "What is the impact of cashless societies on business and society?", the impact on businesses is the increased efficiency of cashless transactions, which offer businesses increased efficiency in terms of payment processing. Electronic payments are faster and require less manual handling, reducing transaction times and improving overall operational efficiency. Furthermore, moving towards a cashless society can lead to cost savings for businesses. Since, cash handling involves expenses such as cash storage, transportation, and security measures. By eliminating cash-related processes, businesses can reduce these costs (Wang, August 2019). Moreover, cashless transactions provide a digital trail, making it easier to track and detect fraudulent activities. This can enhance security for businesses by reducing the risk of theft and improving overall financial transparency. It also, adds to the customer convenience, which can positively impact businesses. This is because customers can make quick and easy payments without the need for physical currency, enhancing the overall shopping experience and potentially increasing customer satisfaction.

Now to the impact, it has on society. As previously mentioned, cashless societies have the potential to promote financial inclusion by providing access to financial services for individuals with limited resources. Furthermore, moving away from cash can lead to a reduction in cash-related crimes, such as theft, robbery, and counterfeit currency (VISA Navigate, 2019). Cashless transaction offer increased security and traceability, making it more difficult for criminals to engage in illicit activities. However, the risks of cybercrimes still prevail. Moreover, cashless transactions leave a digital trail that can be tracked and audited, enhancing overall financial transparency. This can contribute to combating corruption, money laundering, and tax evasion. Lastly, the transition to cashless societies fosters an increase in technological advancements, innovation, and digital

infrastructure development. Which can lead to economic growth, job creation, and increased access to services in areas such as e-commerce and financial technology.

However, it is important to acknowledge the limitations and areas for future research. While cashless societies offer numerous benefits, challenges related to privacy and security, digital literacy, and access to financial services persist. Future studies could delve deeper into understanding the effectiveness of data protection and privacy rules, cybersecurity measures, and strategies for improving digital literacy and access in cashless societies. Additionally, further research can explore the long-term socio-economic effects of transitioning to cashless systems, including its impact on employment patterns and income distribution. Moreover, given the rapidly evolving nature of technology and payment systems, ongoing research is needed to monitor and assess the ever-changing landscape of cashless societies,

In conclusion, the findings of this study helped to shed light on the impact of cashless societies on businesses and society. The transition to cashless transactions brings efficiency gains, cost savings, and enhanced security for businesses while promoting financial inclusion, reducing cash-related crimes, and driving technological advancements for society. Nonetheless, addressing privacy and security concerns, digital literacy, and accessibility barriers remain crucial in maximizing the benefits of cashless systems. Continued research will contribute to our understanding of evolving impact of cashless societies and inform future strategies and policies in this domain. Finally, further reading can also be done in future studies.

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## 8. APPENDIX

Table 1 Paper summaries

Authors/study	Type of Study	Provide recommendations/ heuristics on the adoption of cashless policies (Y/N)	Countries / Societies	Privacy and security risks of e-payments	Financial Inclusion and accessibility
Arvidsson, N. (2019)	Book	N	Sweden	Y	N
CNAAN, R. S. (2021)	Journal	N	Rural India	N	Y
Demirguc-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2017)	Report	N	Global	N	Y
Demirguc-Kunt, A., Klapper, L., Singer, D., &	Report	N	Global	N	Y

Van Oudheusden, P. (2014)					
Federal Trade Commission (n.d.)	Website	N	N/A	Y	N
Kadar, H. H. (2019)	Conference	N	Malaysia	N	N/A
Khan, S.W. (2019)	Conference	N	N/A	Y	N/A
Mahbubur, M. (2018)	Research	N	Bangladesh	N	Y
Ramkumar, G. (2017)	Journal	N	India	N	Y
Tay, L.-Y., Tai, H.-T., & Tan, G.-S. (2022)	Journal	N	N/A	N	Y
V.E. Ejiofer, J.O (2012)	Journal	N	Nigeria	N	Y