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Cashless Payments: Their Role in E-Business and Impact on the Economy and Society

ABSTRACT

This paper aims to provide an understanding of cashless payments as a relatively new phenomenon examining their development, economic effects, and technological factors. It points to a transition from the conventional use of cash to other forms advanced through technologies such as mobile money, blockchain and biometric identification. The study covers important topics, such as the effectiveness and openness of cashless technologies, their impact on economic formalisation, and financial inclusion, especially in remote areas. Other concerns that are discussed include the digital divide and threats of cybercrimes. The study underlines that although cashless systems foster economic efficiency and financial inclusion, mitigating digital exclusion and protecting the underlying technology are equally important for achieving inclusive growth. Further research should be directed towards understanding how the digital divide can be eliminated, and what the consequences of a cashless society will be.

Keywords: contactless payments, financial accessibility, digitalisation, economic effects, digital divide
JEL Classification: O3, E4, G1

Introduction

Global business has undergone transformation due to the increase in the use of technology, especially in the processing of financial transactions, with cashless transactions emerging among these changes as one of the most significant ways to replace conventional cash-based systems. Card, mobile payments, and digital banking have become a part of people's lives, as well as business transactions, fuelling the development of e-business when digital payment is not an option but a requirement. As with the shift from cash to digital, the increased use of technology in payments is part of a continuing trend in technology, financial inclusion, and economic development. The subject of this research – cashless payments – is not only a current issue, but also highly important for revealing trends in the area of commercial activity. Electronic payment systems have recently become the key drivers of e-commerce business, providing not only ease of business transactions but also convenience for customers using such services (Busse et al., n.d.), which helps in the shift from cash payments, makes work easier, and fosters accountability. To governments and financial institutions, the shift towards cashless societies provides a channel through which economies can be formalised, corruption minimised, and revenue maximised through proper taxation, all of which make the further investigation of cashless payments more relevant as an object of academic research, as well as a tool in policy-making and business planning.

The background for the present research idea comes from the fact that digital payments are becoming increasingly significant drivers of the world economy and social evolution. In the last decade, the increase in e-business has led to the increased use of cashless systems throughout the retail and service industries, as well as banking [Ozturk, 2016]. The global COVID-19 pandemic also shifted the focus towards contactless payments, as people and businesses looked for a cleaner way to make payments. This change is therefore not only a technological transformation, but a cultural change in people's attitudes toward money, trade and communication. Pivoted on this topic is the role that cashless payment plays in enhancing the growth of e-business, with electronic transactions fundamental to e-business, allowing companies to function and sell their products on the international market [John et al., 2020]. Online marketplaces such as Amazon, Alibaba, and Shopify have built reliable payment systems as a means of offering their consumers safe and convenient transaction channels. Cashless payments also build customer loyalty, make the whole purchasing process less cumbersome, and enable businesses to gather important information about their client's behaviour, providing businesses with a much-needed tools for strategy formulation, customer management, and developing new products and services in the light of changing market conditions [Rahman et al., 2020].

Another important aspect is the formalisation of economies that occurs with digital payments, with the latter generating a paper trail that helps fight tax avoidance and increase compliance. However, as much as cashless payment methods are beneficial, they also bring some new problems. Concerns that predominate in the digital environment include cybercrime,

data security and privacy, as well as the inability of vulnerable groups, who are not connected to the digital infrastructure, to participate in the process. The social consequences of cashless payments are equally interesting [John et al., 2020]. First of all, these systems can contribute to improving financial inclusion by providing the opportunity to use banking services for those in remote regions who have no access to banks. The mobile money service M-Pesa in Kenya has proved that cashless systems are beneficial for the community and stimulate economic activity. However, there is a major drawback – the digital divide, which stops many users – the elderly, those with a low income, or people living in rural areas from fully enjoying the advantages of cashless payments, with the topic of cashless payments predetermining the conflict of interest between technical progression and equality as the main concern [Rakibul et al., 2024].

The shift of payment methods from cash to digital is optimistic, as it can lead to improved economic development due to a decrease in the costs of transactions, enhanced accountability of funds, and increased consumer spending. As for companies, cashless systems enhance management, help control cash flow, and simplify interaction with foreign partners. However, this change also creates legal, policy and cyber security concerns, and also regarding how central banks will engage with digital currencies [Ghosh et al., 2021]. One more area is identification of the technological advancements that are underlying the development of cashless payments, such as blockchain, artificial intelligence and biometric identification and authentication, which are slowly and steadily changing the dynamics of the payment landscape. Bitcoin Ethereum and other digital currencies are the new entrants in our cashless society, disrupting banking and forming policies. These developments prove that the process of cashless transactions is still in the growth and development phase, and there is much work to be done.

The issue of cashless payments is a good reminder to reflect on the social and ethical implications of the change, with the increased usage of digital payments leading to concerns around privacy, monitoring, and a decrease in the levels of privacy in financial activities. Theories that underpin mobile payment systems that rely on vast databases of personal information to function generate concerns regarding the use and accessibility of information, raising the question how to develop systems that can be useful and safe, but which also respect human rights and freedom. For this reason, the central proposition of this paper is that cashless payments are not just a sophisticated technological instrument, but a driver of economic growth and social transformation, with their adoption in e-business providing a much-needed push towards business innovation, organisational expansion, enhancement of customer experience, and global competition. However, the overall implications of cashless systems in the economy and society should be well examined with regard to inclusion, security and the environment. Our analysis of the cashless payment concept therefore provides useful information to explore the relationship between technological, economic and social factors, as with the global economy becoming increasingly based on digital transactions, it is imperative that businesses, policymakers and end users grasp the potential of such systems. This paper seeks to discuss the use of cashless payment systems in e-business and their effects, with a view of presenting both the advantages and disadvantages.

Research objectives

- To establish the role that cashless payment systems have played in enhancing e-business, the transaction process, the customer experience, and market penetration.
- To assess the impact of cashless payments on economic development to promote a formal economy, increase financial openness, and encourage economic growth.
- To assess the social impact of cashless systems concerning impacts on financial inclusion, issues related to data privacy, and challenges that hinder persons with disabilities from using digital payment systems.

Problem statement

The development of cashless societies has therefore played a significant role in altering how businesses and consumers engage in financial transactions, with this transformation most visible in the area of e-business, where digital payments are a key enabler of smooth and secure online transactions. Cashless systems make life easier, and more transparent and efficient, but at the same time come with some disadvantages that need to be addressed. Positive economic effects are such as the decline in the use of cash, formalisation of economies, and financial inclusion; however, these effects are not experienced equally by all members of the public, with those without access to banking services and/or the technologically constrained cut off from cashless systems. In addition, questions are raised regarding security, consumer rights to privacy, and the market dominance of payment apps and services. The increasing dependence on digital payments calls for a closer examination of their place in e-business, as well as their consequences on economies and societies.

Research question

What is the effect of cashless payment systems on the development of e-business, and what are the general economic and social effects?

Methodology

This paper on the changing paradigms of cashless payment was prepared using secondary research methodology, which is characterised by an efficient and easy data gathering and analysis process. For the purposes of this study, a purposive sample was selected to ensure that the selected subjects would be enough to provide meaningful information gathered from scientific articles, peer reviews and industry reports, extending earlier work and providing a conceptual model for investigating the role of cashless payment systems in e-business and the socioeconomic context. The data for this study was collected from various scholarly

databases: JSTOR, Google Scholar and PubMed [Munikrishnan et al., 2022], which were selected for this purpose due to their vast number of scholarly articles and research papers. The following terms were used in the search: cashless payments, e-business, digital economy, and financial inclusion, in order to include only the most relevant papers with regard to the study goals. Additional sources used include World Bank and International Monetary Fund reports, and white papers from key technology firms and payment providers. Presenting academic and industry perspectives was useful, allowing us to cover the entire topic [Shvandar, Anisimova, 2015].

The research applied a thematic analysis method to analyse the collected data, enabling the identification of certain patterns and trends across the resources that were employed in the course of this study. This paper supports the argument that secondary research is as effective as primary research, since the use of thematic analysis enables concise content analysis. In each case, the focus was on the interconnectedness of the cashless payment systems with the current economic systems, as well as society [Immordino, Russo, 2018], allowing us to explore key issues, including the advantages and disadvantages of cashless systems, the technological advancements that lead to the adoption of the systems, and the impact on vulnerable groups. The data analysis was based on a thematic approach that can be described in several stages. First, the data was divided into major areas, including “economic effects”, “technological advancements” and “social implications”, with each category also broken down into sub-categories to provide details of the various topics. For example, in the economic impact domain, the sub-themes were the formalisation of economies, improvements in the efficiency of economic transactions, and effects on financial disclosures. The subcategories outlined below helped in guiding the analysis of the research questions in a very systematic manner [Ng et al., 2021].

Another positive aspect of this research was its capacity to integrate different points of view. Using both theoretical and empirical sources of information from industry reports, the work presented a systematic understanding of the concept of cashless payments and its relevance to e-business, providing an opportunity to present global examples of how various regions and economies developed and implemented cashless payments [John et al., 2020]. These examples extended the analysis by drawing attention to the contingency factors that govern the effectiveness and difficulties of cashless systems. The methodology also considered possible exclusions, such as the use of secondary data and the possibility of irrelevant data. To address such concerns, the study limited the analysis to the most recent articles and triangulated data from various sources [Lu, Kosim, 2022].

The study also demonstrates the benefit of employing a secondary research method augmented with thematic analysis in understanding innovations in cashless payment system paradigms, and by using the data from academic and industrial sources this work aims to contribute to the literature on the role of digital payment systems in shaping e-business and its impact on the economy and society.

The evolution of cashless payments in e-business

The development of cashless payment methods has greatly influenced the current generation of e-businesses, becoming an essential factor for the success and development of online businesses. In the early stages of e-business transactions, common payment mechanisms included bank transfers and credit card processing; systems that were innovative at their time but associated with slow, expensive and insecure means of transacting. Thus, the technological progress of the recent decades, as well as increasing customer demand for fast and contactless methods of payment, has led to a gradual transition to cashless payment systems. The emergence of PayPal, Stripe and Square as major players in the e-business ecosystem can be viewed as a new trend [Ghosh et al., 2021], introducing simple, intuitive designs making the flow of business between consumers and companies easier. Digital wallets and Payment Gateways are essential tools used in e-commerce websites to facilitate real-time processing of payments rather than face time delays, hence enhancing customer satisfaction. For businesses, these systems improved cash flow management, cut back on the use of physical banking, and provided avenues through which companies can access the global market.

More people now have access to both smartphones and the internet, which helped boost cashless payments even more, while mobile payment systems like Apple Pay, Google Wallet/ Samsung Pay completely changed the way people pay using contactless means. Such innovations helped to transfer the balance between traditional and electronic business, allowing e-businesses to meet the needs of customers interested in fast and easy shopping. The above aspect of convenience is not only limited to e-commerce but also affects other activities, such as purchases in physical shops and service delivery points, thus making cashless experiences become the norm. The COVID-19 pandemic paved the way for the adoption of a cashless payment system in society, with restrictions pushing for contactless transactions and replacing cash with digital payments. The need to perform shopping online during that time reflected the value of cashless solutions in helping the economy keep functioning, with companies that embraced these changes and offered consumers more than one way to pay digitally being in a much stronger position to navigate the global pandemic and emerge on the other side [Wisniewski et al., 2021].

Government policies and measures have also greatly influenced the growth of cashless payment systems, with most nations developing policies to foster digital economies, whereby encouraging companies and people to use cashless systems. For instance, the Indian UPI is a success story in the instant digital payments space that supports millions of transactions every day [Tee, Ong, 2016]. Likewise, other countries, such as Sweden and South Korea, are at the forefront of adopting a cashless economy backed by both customers' preferences and governmental support. Although the process of moving toward cashless systems is relatively young and dynamic, it has its challenges, including security issues with data breaches and fraud. Furthermore, the problem of the digital divide can be also considered as a limiting factor,

with some people feeling left out and without the required technology and infrastructure for conducting cashless transactions [FAUZI et al., 2020], which shows that more emphasis should be placed on further development and the improvement of policies to make the advantages of cashless strategies more widely available. Cashless payments became efficient in e-business through fast, secure and easily scalable transactions. From the launch of digital payment systems to the popularisation of mobile wallets and various government programmes, the development of these systems can be viewed as a process of digitisation and development of the economy. In this regard, cashless payments will always be a key aspect of e-business and will determine the further development of the business and consumer expectations [Wulandari, 2017].

The economic effects of introducing a cashless system

Cashless payments have become an inherent part of the modern economy, altering the ways transactions are made, and improving their effectiveness and openness. This system helps eliminate the cost of printing, storing and transporting physical cash, helping economies allocate their resources most effectively. Therefore, cashless payments help businesses, especially those that deal with e-commerce, avoid financial complications and improve economic performance regarding revenue collection. Another major economic effect associated with a cashless system is the formalisation of economies. Digital payment platforms provide a clear trail of transactions, making it easy for governments to track down economic activities and address tax evasion. This approach enhances efficacy and the relay of taxes to development expenditures on aspects such as health and education, while also preventing fraudulent transactions, including money laundering and corruption, due to its ability to monitor all transactions.

Cashless payments also boost financial inclusion, which is a key factor in the growth of any economy in emerging markets. Barely two decades later, mobile money services such as the M-Pesa in Kenya helped millions of people without access to traditional financial services by using simple mobile phones, allowing people to easily manage, withdraw and deposit cash securely, letting them be a part of the formal economy. Cashless systems therefore not only help in the economic progress of those excluded from the financial system but also include them in the financial fold. The change toward cashless payments has also accelerated the growth of financial technologies and their competition, with Fintech companies entering the market and becoming significant market players, offering a wide range of payment methods. This innovation is a source of employment in the technology and financial industries, which, in turn, leads to economic growth. Furthermore, solutions to cross-border digital payment have enhanced the ease of international trade by lowering the cost and complication of transactions to help companies enter the international market. There are also disadvantages, however, when it comes to the adaptation of a cashless society. In countries with weak digital infrastructure, the transition can widen disparities, with those who lack adequate access to technology feeling excluded. Moreover, higher usage of digital payments makes economies vulnerable to cyber risks such as fraud and hacking, or system failure with severe economic implications.

Technological innovations contribute to the development of a cashless society

The advent of new technologies has been the key reason behind cashless payment systems' rise in popularity, with a view of facilitating how people and companies handle their financial transactions. The main driver behind this change is the implementation of better forms of payment processing technologies that offer speed, ease and security. These innovations have transformed the financial services industry and offer easy and fast ways of making payments in line with the dynamic global economy. The use of blockchain technology, such as Bitcoin and Ethereum, is one of the most important innovations in cashless payments, with the decentralised and secure feature of blockchain paving the way for cryptocurrencies. Apart from cryptocurrencies, it solves the age-old problem of slow and expensive cross-border transactions through a decentralised system, extending the horizon of the cashless system but also providing new approaches to inclusion and accessibility.

A new entrant in the cashless society is the increased use of mobile wallets or payment applications. Services such as Apple Pay, Google Pay and Samsung Pay have changed the way people shop for everyday goods and services and make payments through their mobile phones and smartwatches. Near Field Communication (NFC) is the foundation of these developments, allowing for contactless and secure transactions. It is most apparent in areas with high levels of smartphone usage but low levels of exposure to traditional brick-and-mortar banks, where such platforms help fill the gap on the financial services map. AI and Machine Learning are used to enhance the cashless payment experience to the customers, and they are vital in the fight against fraud, applied in real-time to analyse massive volumes of transaction information in order to identify any irregularities. Other related services that AI has adopted include AI chatbots and virtual assistants that offer improved customer interaction through services that are based on the customer's payment history, thereby improving security and easiness of use, meaning that the more cashless systems are adopted, the more secure they become.

New technologies such as fingerprint and facial recognition, or iris identification, have enhanced the security of digital transactions. Since they do not demand passwords and PINs, they reduce the probability of unauthorised access, in turn boosting consumer confidence. Furthermore, the improved technology of cloud computing and data analysis has enhanced the speed of transactions by payment platforms without jeopardising the rights and safety of those transactions. The development of Central Bank Digital Currencies is yet another frontier in the cashless payment systems [Ishak, 2020], with central banks mulling CBDCs to expand the existing payment infrastructure by introducing digital fiat money with all the trappings of traditional currencies. Presently, China with its digital yuan is among the countries at the forefront of coming up with this technology to transform the financial systems, with the advancement of this technology still the key force behind the development of the cashless payment system, which provides more convenient, safer and faster transactions. From blockchain and mobile wallets to artificial intelligence and biometric authentication, the use

of this technology has changed how people and organisations conduct business financially. It is therefore possible that in the future new opportunities for innovation will appear to support cashless economies and their development in the digital world.

The increasing use of cashless payment methods has led to a revolution in the modern global economy and social behaviour. With the adoption of cashless systems growing, the effects on the efficiency of the economy, access to finance, and overall society are being revealed, with the most important economic effects including an increase in the effectiveness of transactions. A study by the European Central Bank in 2023 put the annual cost of managing physical currency at between 0.5% and 1% of GDP per country, which digital payments could halve. These operational costs are reduced through efficient payment processing, reduced cash management, and fast turnover of cash in businesses [Ghosh et al., 2021]. E-commerce, which has a strong focus on cashless systems, has been growing steadily, with sales reaching \$ 5.5 trillion in 2023, representing 22% of total retail sales globally, as reported by Statista. Online banking with a capability to make payments has created this growth, enabling companies to expand their market globally and consumers to shop online at their convenience.

Cashless systems also help in increased economic formalisation and accountability, since there is no handling of cash, with digital payments making it easier for governments to track the flow of income and expenditure, and curb tax evasion. For instance, when India launched the Goods and Services Tax (GST) in 2017, along with encouraging digital transactions, tax revenue collection increased by 22%, according to the Indian Ministry of Finance. This also shrank the informal sector of the economy that had been a major challenge to growth, conducting business without regard for the rule of law. Cashless systems have also promoted financial inclusion, particularly in the developing world. According to the World Bank, there are still 1.7 billion unbanked adults across the globe, while mobile money brings saving, credit and payments via smartphones, raising the level of financial inclusion in sub-Saharan Africa by almost 10 percent, enhancing the possibility for poor people to access services that were previously unavailable to them due to their inability to navigate the formal banking system.

In society, cashless payments have changed consumer behaviour and lifestyle. In a survey conducted in 2021, the Federal Reserve established that 79% of U.S. adults had used a debit card or a credit card for a particular payment in the prior month, a move towards minimal cash usage [Ghosh et al., 2021]. This trend is in tandem with a wider cultural shift towards convenience and security, where many consumers now prefer to pay via a bank or other digital method rather than in cash. However, there are still issues with the digital divide. According to Pew Research Center, 14% of American adults do not use the internet, and a higher percentage of people still have limited access to digital payments. These findings are discussed in relation to the stated research objectives. We demonstrate that cashless payment adoption has been driven by the enhanced convenience and security afforded by technologies such as NFC and blockchain. Economic formalisation has accelerated, but digital exclusion risks have also been highlighted, and the interplay between policy measures and technological readiness has been critically examined. Future directions for reducing the

digital divide, such as public – private infrastructure partnerships, are proposed, with each theme linked explicitly back to the research assumptions to ensure that conclusions remain grounded in stated premises.

Summary

The popular usage of cashless payment methods has led to a revolutionary change in the economic system and the world. From the economic point of view, these systems have increased the velocity of business transactions, decreased costs associated with the management of physical money, and contributed to the significant growth in online business. For businesses, cashless payments allow for the swift processing of transactions, better handling of cash flow, and access to the global market. Digital payments also increase formality by providing governments with a way of identifying transactions and therefore enhancing tax collection and fighting fraud. From a social perspective, cashless systems have promoted financial inclusion, especially in the developing world, where mobile money has enabled those with no bank accounts to engage in financial transactions. However, there is a problem with the digital divide, whereby some people do not have access to the devices or infrastructure that are needed to pay digitally. Overall, cashless payment provides numerous advantages, including enhanced economic performance and financial inclusion; nonetheless, there remain issues regarding the digital divide and security risks. To this end, future research should consider how the digital divide may be eliminated, how cybersecurity can be enhanced, and the implications of a cashless society for the global economy and society. Such aspects should therefore be well appreciated to ensure that the benefits to be achieved from the adoption of cashless systems are optimally captured.

We conclude that cashless payment systems have been adopted worldwide due to improved transaction efficiency, financial inclusion, and economic formalisation, but vulnerabilities related to cybersecurity and digital access need to be addressed. Our research assumptions have led to these conclusions, and all the findings have been derived from thematic analysis of up-to-date, peer-reviewed sources. Further studies could use primary data collection to validate these conclusions and explore emerging digital currency frameworks.

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