



ASHESI UNIVERSITY

INVESTIGATING THE PROSPECTS AND CHALLENGES OF A CASHLESS ECONOMY IN GHANA

By

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27th April 2021

DECLARATION

I hereby declare that this dissertation is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere.

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I hereby declare that the preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of thesis laid down by Ashesi University.

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ABSTRACT

It is conventional knowledge that cash has been the most common medium of exchange (Manda and Margana, 2019). However, in line with technological advancements, cashless economies have emerged (Otoo, 2020). Based on this, scholars have conducted several studies to examine the benefits and challenges of the cashless system in most economies. While this is commendable, research on the cashless system in the Ghanaian context is scant. Thus, this study aimed to investigate the benefits associated with the cashless system, its challenges in the Ghanaian context, Ghana's readiness to adopt the cashless system and the strategies Ghana can adopt to facilitate the efficiency of transition to a cashless economy.

The study adopted a mixed methodology and an expert judgement estimation technique to collate all-encompassing data which captured the research questions. The study adopted convenience and simple random sampling techniques to gather information from 20 banks, 71 owners of SME's, two seasoned Bank of Ghana officials and 15 ordinary Ghanaian citizens.

The findings suggested that the cashless system is convenient, reduces long queues in banks and reduces risks associated with bacteria transmission and losing physical cash to robbery attacks and fire outbreaks. The study further indicated that the cashless system is expensive and prone to cyber-attacks and internet issues. The study revealed that Ghana is generally ready to transition into a cashless economy. Based on the results, the study recommends that Government has a crucial role in collaborating with the network service providers to reduce the charges associated with the cashless system. The study also recommended that the Government has a crucial role in creating more awareness about the cashless system in Ghana.

Keywords: *Cash system, cashless system, Small and Medium Enterprises, universal banks, Bank of Ghana.*

LIST OF ACRONYMS

Acronyms	Full Meaning
ADB	Agricultural Development Bank
ATM	Automated Teller Machine
ACH	Automatic Clearing House
BOG	Bank of Ghana
CVV	Card Verification Value
DOI	Diffusion of Innovations
EFT	Electronic Fund Transfer
GHIPSS	Ghana Interbank Payment and Settlement Systems Limited
POS	Point of Sale
PIN	Personal Identification Number
SDG	Sustainable Development Goal
SME	Small and Medium Enterprise
TAM	Technology Acceptance Model
UPI	Unified Payments Interface
USSD	Unstructured Supplementary Service Data

DEFINITION OF TERMS

Barter system: A system which involves directly exchanging goods and services without using any form of cash.

Cashless Economy: An economy where financial transactions are either not conducted with money at all, or cash usage is at the barest minimum. Electronic payment modes are dominant in such economies.

Cash system: A system where bank notes and coins serve as the primary medium of exchange.

Federal Reserve Bank: The central bank of the United States of America which oversees the supply of currency, provides loans to commercial banks, among many other functions.

Bank of Ghana: A central bank for Ghana which regulates and implements policies which are geared towards ensuring that the entire banking system of the country is operating smoothly.

Cyber fraud: A malicious act which is committed via the internet using computers. Such crimes include hacking the personal information of individuals, illegally reproducing software to sell, or siphoning money from individuals online using scams.

Sustainable Development Goals: A cluster of 17 intertwined goals which are collectively geared towards achieving a positive and more sustainable future for the world.

Informal Sector: A sector which consists of micro and small-scale businesses where most of the workers are self-employed.

Formal Sector: A sector which encompasses employees who work on a contract basis, have organized regulations regarding recruitment and receive wages at the end of a specified period.

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CHAPTER ONE: INTRODUCTION

1.0 Overview and Background

From history, the well-known medium of exchange was a system known as bartering. This system was more common among businessmen, traders and generally every person who decided to engage in business transactions (Rönnbäck, 2020). The barter system involved trading goods and services among individuals without any form of cash involved (Rönnbäck, 2020). However, traders saw this system to be very daunting since they had to find a person who also needed their goods or services at a particular time (Mpinganjira & Oliver, 2011). Thus, there had to be a double co-incident of wants from both players in the system for the barter system to work.

Furthermore, traders expressed the concern that they felt cheated since some of the goods they received in exchange for theirs had a lower value in terms of their worth than what they offered (Mpinganjira & Oliver, 2011). Owing to this, the need for trade and exchange as a step forward from barter necessitated the need for a medium of exchange. This led to the use of different media of exchange, out of which cash or fiat money has by far, emerged as one of the best mediums of exchange despite having a zero intrinsic value (Manda & Margana, 2019). Cash is defined as physical money, usually in coins, banknotes, or demand deposits, which is used in the payment of debts and facilitating transactions (Obuobi et al., 2020).

Cash alternatives, such as cheques and payment cards (debit and credit cards), were later adopted to facilitate faster and more convenient transactions (Rivera, 2019). With advancements in technology, global payment systems have become digitized, and innovative electronic payment systems have speedily emerged (Otoo, 2020). On this account, the world is gradually

eschewing cash to adopt digitized payment systems and be at par with technological advancement.

The trend towards accommodating cashless transactions can be traced back to the 1870s when Western Union launched the Electronic Fund Transfer (EFT) (Khan et al., 2017). After the launch of the EFT, many people began to find it more convenient to make payments for transactions without being obliged to be physically present at the area where purchases were to be made. Subsequently, technological innovations which sort to introduce more convenient and faster systems for cashless transactions sprang up (Khan et al., 2017). In 1918, the Federal Reserve Bank of the USA adopted the telegraph, which was used to transfer money (Khan et al., 2017).

The United States people had not widely patronized the telegraph idea until an electronic funds-transfer system known as the Automated Clearing House (ACH) was adopted in 1972 (Hounshell, 2000). The feasibility of the system popularized electronic payments in general (Khan et al., 2001). In this regard, many countries began to adopt online payments, out of which cashless economies began to emerge. By the year 2010, digital payments media such as digital wallet systems, PayPal, credit cards, debit cards and mobile systems had gained momentum in most parts of the world (Achord et al., 2017).

According to Udo (2019), the use of cash has saddled most economies with high operational costs and increased risk of losing cash through burglaries, armed robbery, bank heists, fire outbreaks and fatal accidents. Awuku (2019) contends that the printing of physical cash into the system has the propensity to cause inflation. Here, an increase in the amount of physical cash in the economy increases the amount of money in circulation, thereby increasing aggregate demand by consumers (Mankiw, 2009). With no change in the number of goods

produced, it will imply that aggregate demand would exceed the supply of these goods. Thus, producers would be left with no other option than to increase the prices of their goods which consequently results in inflation (Mankiw, 2009).

In a cashless economy, physical cash does not exist, so electronic payments are used as cash alternatives (Rekha, 2017). Adurayemi (2016) postulates that a cashless economy does not imply that cash has been eliminated; it means that the use of cash has been appreciably minimized, and electronic payment channels are being adopted. With a country transitioning to become a cashless economy, cash related corruption will ease since digital payment systems record detailed information on transactions as opposed to cash (Kolapo et al., 2015).

However, it cannot be overlooked that there are inherent challenges associated with a cashless economy. For instance, in economies where cyber fraud has been heightened, electronic payment mediums run at a very high risk of getting hacked (Gaba & Nagpal, 2018). This may create insecurity among the people who wish to adopt the system (Gaba & Nagpal, 2018).

Over the past few years, developing countries like South Africa and Kenya have made advancements towards becoming cashless economies (Bayero, 2015). Murahuri (2019) contends that mobile money transactions, which also form part of electronic payment mediums, have accounted for 44% of Kenya's Gross Domestic Product (GDP) in 2018. The GDP here denotes "the total value of final goods and services produced within an economy over a given period" (Mankiw, 2011, p.22).

In tandem with this, Alawiye-Adams (2012) posits that though some countries have been prosperous in adopting the cashless system, the system's workability is hinged on whether the financial system of the economy is robust enough to adopt the system. Ghana is one of the

developing countries striding towards transitioning to become a cashless economy. This move began when the Bank of Ghana, through its subsidiary, the Ghana Interbank Payment and Settlement Systems Limited (GhIPSS), launched the e-zwich card, which sought to make it easier for Ghanaians to transact business as opposed to the use of physical cash (Sarpong, 2013). According to a banking survey conducted by Price Waterhouse Coopers (PWC) in 2016, Ghana stands the chance of becoming a cashless economy within the next 5 to 15 years (PriceWaterhouseCoopers, 2016).

In research conducted by Ahmad *et al.* (2020), mobile money in Ghana has attained a 48% acceptance rate with about 8.3 million active accounts. Osei-Boateng and Ampratwum (2011) point out that Ghana's economy consists of two main sectors, the formal sector, and the informal sector. The formal sector in Ghana consists of employees who work on a contract basis, have organized regulations with regard to recruitment and receive wages at the end of a specified period (Quartey *et al.*, 2016). The formal sector encompasses corporate organizations and Ministries. On the flip side, the informal sector consists of micro and small-scale businesses, where most of the workers are self-employed (Koto, 2015).

Drivers, farmers, artisans, fishers, to mention a few, form part of the informal sector of Ghana. The use of cash is predominant among persons in the informal sector of Ghana (Ofori, 2009). The predominance of cash in this sector is attributed to the fact that most people within the sector do not have bank accounts and therefore are more dependent on cash for day-to-day transactions (Osei-Boateng & Ampratwum, 2011). Also, workers in the informal sector do not generate enough profit from their businesses. Therefore, they would find it daunting to deposit the little they have into online payment platforms like the banks where charges are applied to deposits (Osei-Boateng & Ampratwum, 2011).

Regarding anecdotal evidence which highlights Ghana's move towards becoming a cashless economy, the Vice President, Dr Mahammudu Bawumia, in 2019, announced the launching of the Universal QR code. Bawumia's statement was an affirmation of Ghana's intention to transition into a cashless economy. He stated, "We will introduce what we call the Universal QR code. It leverages the technologies that we have built. Once we launch the Universal QR code, all businesses and traders will essentially no longer need point of sale devices" (Graphic Online, 2019, para. 2). However, news from Citifmonline (2020) highlighted the statement, "Ghana plans to eliminate paper currency from most of its transactions" (para.2). The statement here implies that Ghana is not totally eliminating cash from its transactions and thus, is not going fully cashless.

With the advent of the COVID 19 pandemic, which fueled skepticism on whether the virus can be transmitted through banknotes and coins, Ghana capitalized on this situation to launch the Universal Quick Response (QR) Code and Proxy Pay system. Vice President Bawumia believed that in cash-dominant countries like Ghana, it was imperative to adopt non-cash alternatives that would limit human contact. He ended with the statement, "If we all do this, we can transition Ghana into a near cashless economy in a very short period" (GhanaWeb, 2020, para. 20).

This study, therefore, focuses on Ghana and its declared intention to go cashless. The study investigates the benefits of a cashless system in Ghana and the inherent challenges associated with Ghana transitioning into a cashless economy. The study will provide recommendations on how Ghana can leverage the prospects of the policy whilst mitigating the associated challenges.

1.2 Research Problem

Based on the evidence presented in the background section, Ghana is already advancing towards becoming a cashless economy. Literature confirms that Ghana's move towards a cashless economy is hinged on challenges such as the risk of theft of cash and inflationary pressures emanating from the cash system. However, it is worth noting that transitioning to a cashless economy is a mixed blessing (Otoo, 2020; Nyoni & Bonga, 2017; Muarya, 2019).

Rekha (2017) postulates that cashless economies like Germany have about 8.7% of cash circulating within the economy. Also, Germany is ranked 9th in the graft ranking. India, another cashless economy, has about 11.8% of cash circulating in their economy (Rekha, 2017); however, the nation is ranked 76th in the global corruption ranking. This indicates that though Nayak et al. (2017) have established that cashless systems address corruption, some cashless economies like India are still ranked lower in terms of global corruption. These results are not consistent since Germany and India are two entirely different economies.

Before Ghana introduced the mobile money system in 2009, the country's GDP growth rate stood at 9.14% and experienced a general increase (*see figure 1.0 below*). After 2009, the GDP growth experienced a sharp increase to 7.8% in 2010 and 14.07 in 2011. However, the GDP growth rate experienced a sharp decline afterwards. In the case of Nigeria, which also introduced the mobile money system in 2009, the GDP growth rate stood at 6.7% and experienced a decreasing trend before introducing mobile money. However, after introducing mobile money, the GDP growth rate increased to 8% in 2010 and then declined to 5.3% in 2011. In the subsequent years, Nigeria's GDP growth rate generally declined. For Sweden that introduced the mobile payment system in 2012, the GDP growth rate was generally declining before introducing the system. The same decreasing trend continued even after the system was introduced. These results imply that each country responds differently to the cashless system. It

can, therefore, be deduced that each country is endowed with different infrastructures and legal frameworks, which causes them to respond differently to the cashless system. *See Figure 1.0 below.*

Based on the above evidence, the underlying fact is that there is no one-size-fits-all approach to each country. In this regard, Ghana's experiences concerning becoming cashless would be different from what Nigeria and Sweden would face. Thus, with the diverse economic endowments of each country, it stands to reason that Ghana's experience regarding transitioning into a cashless economy would not be typically the same as the others. Thus, though Ghanaian policymakers can use other countries as case studies to serve as guidelines in implementing a cashless system, it will be prudent for Ghana to glean insights from available studies which analyze the cashless system in the Ghanaian context.

Even though in the past, scholars (Awuku,2019; Apau *et al.*, 2019) have made commendable efforts to evaluate Ghana's readiness in adopting a cashless system, Ghana seems to have some significant roadblocks which may be associated with becoming a cashless economy. Though research on the economic prospects and benefits associated with other countries becoming cashless economies has been adequately dealt with, there are still some inconsistent results in the literature about the whole idea of going cashless. Also, not much research has been conducted using the economic structure of Ghana as the context of the study. In this regard, there is a growing skepticism associated with Ghana adopting a cashless system. This research will try to provide some clarification for Ghana's case.

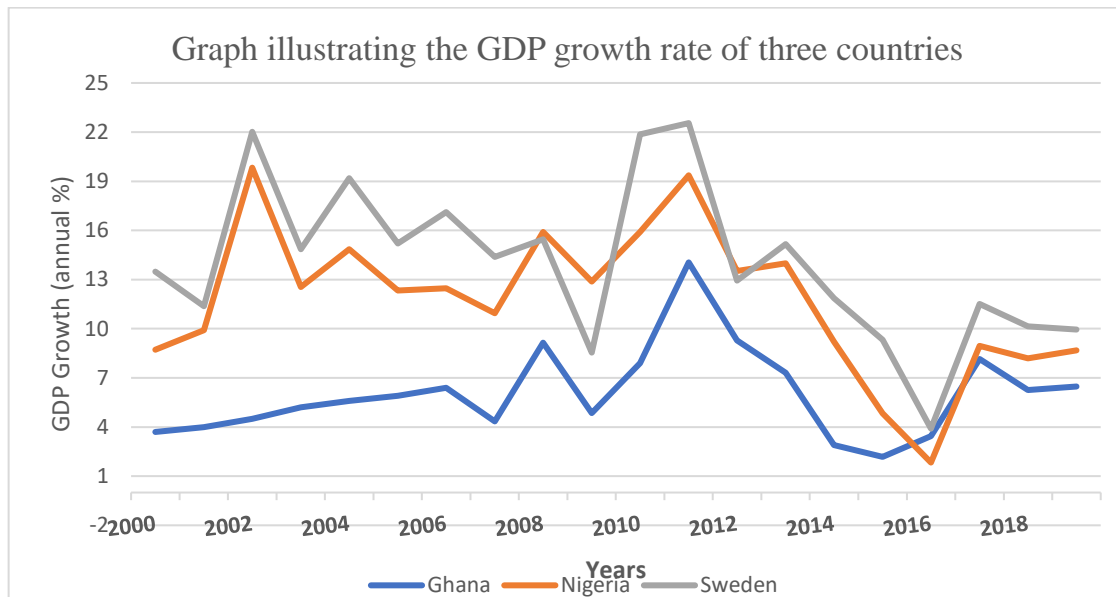


Figure 1.0: Graph showing GDP growth of Ghana, Nigeria, and Sweden

Source: Author's computation based on World Bank data (2000-2019)

1.1 Research Questions

The study aims at generating results which answer the following questions

- I. What are the economic benefits and the inherent challenges associated with Ghana transitioning into a cashless economy?
- II. How prepared is Ghana to embrace a cashless system?
- III. What are the strategies Ghana can adopt to facilitate the efficiency of transition to a cashless economy and to harness a cashless system's total benefits of a cashless should it indeed go cashless?

1.4 Research Objectives

The study is geared towards meeting the following objectives:

- I. To outline the economic benefits and the inherent challenges which are associated with Ghana transitioning into a cashless economy.

- II. To ascertain Ghana's preparedness to embrace a cashless system.
- III. To determine the strategies Ghana can adopt to facilitate the efficiency of transition to a cashless economy and to harness a cashless system's total benefits if Ghana indeed goes cashless.

1.5 Significance of the Study

The study will contribute to extant literature on the challenges and prospects of a cashless economy using Ghana as the context of the study. Considering the fact Ghana is a developing country, and is therefore, still making strides towards becoming a developed state, policymakers must have an in-depth analysis of how specific policies will shape the economy. The results from this study will enable policymakers like the Bank of Ghana to implement well-informed, feasible and sustainable economic policies which would leverage the prospects associated with the policy whilst mitigating the challenges which may come up. The policies would help banks, businesses, utility providers and foreign partners to be well-equipped on the measures they must also put in place to capitalize on the benefits of the cashless system.

Furthermore, the cashless policy serves as vehicle which propels Ghana into achieving the ninth Sustainable Development Goal (Hub,2020). This goal encompasses building of a resilient infrastructure, inclusive industrialization, and fostering innovations (Hub,2020). Here, new digital payment modes come with the emergence of new industries and births more innovations which seek to alleviate the issues which come with electronic payment systems (Rochemont,2020). Concomitantly, these innovations fuel economic growth with steers the country towards the eighth Sustainable Development Goal (decent work and economic growth) (Pradhan et al., 2017). For this reason, this research is of immense significance.

Also, the findings from the research may highlight specific salient challenges which have not been extensively discussed and considered by other economies. In this regard, other

economies which have already gone cashless can apply the new findings of this study to their economic situations to alleviate the hindrances of the policy. Economies which also have very similar endowments with Ghana and are also thinking of moving towards the cashless phase would find the results imperative for their economic decisions.

1.6 Organization of Study

The thesis is structured as follows: The first section which is the introduction expounds on the general overview of the topic, provides a background to the study, the problem statement, the research questions, the research objectives, and the significance of the study. For the second chapter, which is the literature review, it probes into extant literature to generate more insights on the contributions which scholars have made around cashless economies in general. The gaps in the literature would be highlighted, and this study will make it a point to fill these gaps. In the third chapter, which is the methodology of the study, the various steps which would be adopted in generating insights to meet the objectives and fill the gaps identified with existing literature would be adopted. The methodology would include the research design, the sampling strategy, the data collection, data analysis, validity and reliability, and ethical considerations. In the fourth chapter, the findings from the study would be extensively discussed. Based on the findings, chapter five of the study would draw a well-founded conclusion and provide informed recommendations which would be imperative for stakeholders and economies.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter details the contributions of extant literature pertinent to this current research topic. The chapter commences with theoretical underpinnings and aptly discusses the theories that support the research. The chapter furthermore provides an overview of the banking system using Africa and Ghana as the contexts of analysis. The subsequent sections provide existing literature on the cash system and the cashless system, together with the pros and cons associated with each system. The chapter concludes by pointing out some of the gaps which the study aims at filling.

2.2 Theoretical framework

This study is anchored on the Technology Acceptance Model (TAM) and the Diffusion of Innovations (DOI) theory.

2.2.1 *Technology Acceptance Model*

Fred David propounded the Technology Acceptance Model (TAM) in 1985 (Legris *et al.*, 2003). Fred David's seminal thesis at the MIT Sloan School of Management established a foundation upon which the Technology Acceptance Model was developed (Ajayi, 2014). The model details how individuals or users come to adopt and effectively utilize technology (Ajayi, 2014). The focal point of this model is to predict whether an information systems tool would be adopted and to outline the various modifications which must be made on the tool to influence its adaptability by users (Momani *et al.*, 2017). The model postulates that when a new technology is presented to users, their decision on whether to adopt it is contingent on two primary factors. The factors include the perceived ease of use and the perceived usefulness (Momani *et al.*, 2017). The perceived ease of use details the degree to which an individual believes that a newly introduced system would be used in an effortless manner (Hamid *et al.*, 2016). Regarding the perceived

usefulness, it highlights the extent to which a person would hold on to the belief that a particular system or technology would enhance his or her output (Hamid *et al.*, 2016).

Hypothetically, Davis (1985) opines that the perceived ease of use of a system has a direct effect on its perceived usefulness. Buttressing further, he states that all other things being equal, a system which is very easy to use will positively impact job performance (Davis, 1985). A wide range of studies has applied the model in assessing the intention of physicians to adopt a telemedicine technology (Hu *et al.*, 1999), technology-integrated teaching and learning (Joo *et al.*, 2018) and the intentions of customers to engage in virtual shopping (Usman & Kumar, 2020). The TAM is one of the most convenient, powerful, most accessible tools which measures the efficiency of use of a technology (Hu *et al.*, 1999; Hamid *et al.*, 2016; Momani *et al.*, 2017).

Gong *et al.* (2004) conducted a study to evaluate whether the computer self-efficacy of instructors had a positive influence on the degree to which they would accept a web-based learning system. The study concluded that there was a robust relationship between the computer self-efficacy of the instructors and their perceived ease of use. The findings of Gumbo (2017) mirror the observation made by Gong *et al.* (2004). In his study, Gumbo (2017) attempts to investigate the factors which are pivotal in determining customers' adoption rate of online payment platforms. The study concluded that the perceived ease of use and the perceived usefulness of the system were the most influencing factors which accounted for the rate at which customers adopted the system.

Though proponents of the TAM have made commendable efforts on the TAM to project the validity of the model, some critics have also expressed divergent views, which are also valid to some extent. Mathieson (2001) holds that the TAM does not provide exhaustive information; however, it touches on the general perspectives of users, regarding the systems. Venkatesh and Davis (2000) maintain that the TAM is not descriptive enough to point out the errors which may

be associated with the implementation of a system. Contextualizing this current study, opinions, and acceptance rate by Ghanaians regarding the implementation of the cashless system is regulated by the perceived ease of use of the system and the perceived usefulness.

2.2.2 Diffusion of Innovations Theory

The Diffusion of Innovations theory, also known as the Innovation Diffusion theory, explains how, why and the rate at which a new technology grows or advances within a specified population (Ajayi, 2014). The theory was propounded in 1962 by an American communication theorist, Everett Rogers, in his book *Diffusion of Innovations*. According to Rogers (2003), "diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system" (p. 418). Rogers (2003) further noted that one of the most significant determinants of the adoption rate of an innovation is the perceived characteristics of the technology. Together with that, other factors like the relative advantage and the compatibility of the innovation with current needs also influence the adoption rate (Sahin, 2006).

Under the theory, Rogers (2003) opined that before an innovation is adopted, it must go through a process he termed as the Innovation-Decision process. He noted that the innovation-decision process is "an information-seeking and information-processing activity, where an individual is motivated to reduce uncertainty about the advantages and disadvantages of an innovation" (p.172). The process commences from the knowledge stage where individuals get to know about the existence of innovations and are willing to generate detailed insights on the innovation. The subsequent stages are the persuasion, decision, implementation and finally to the confirmation stage where a final decision is made, regarding the adoption of the innovation (Sahin, 2006).

Rogers (2003) also posits that the DOI theory consists of six prime elements: the characteristics of the innovation, individual user characteristics, diffusion network, individual adoption process, adopter distribution overtime, innovativeness, and the characteristics of adopters. Zhang *et al.* (2015) applied the DOI theory in their research to investigate the factors which influence the decisions of patients to accept and utilize consumer e-health innovations. From the findings of the research, Zhang *et al.* (2015) concluded that the features of the innovation and the characteristics of the hospital patients who were the primary users of the system greatly influence the adoption rate of the online system. Olatokun and Igbinedion (2009) also investigated the adoption rate of ATMs in Nigeria using the DOI as the theoretical underpinning. From their research, their findings highlighted the fact that compatibility, relative advantage, complexity and trialability were elements which had a cogent impact on the attitudes associated with the use of ATM cards in Nigeria.

Though the DOI theory has received many commendations, other schools of thought have also identified some of its limitations. Hazelman (2017) points out that the theory does not factor in the prevailing number of resources at an individual's disposal, which plausibly, could influence the adoption rate of innovation. The theory does not also consider the economic factors which may either promote or impede the adoption of an innovation (Hazelman, 2017). Narrowing the DOI theory to this study, the adoption of the cashless system would be possible if Ghanaians and policymakers are well-informed about the perceived characteristics of the technology. In this regard, the challenges and prospects of the cashless system would be important information.

2.3 Africa's banking system: An overview

Africa's banking system consists of the Central banks and institutions which are responsible for accepting deposits (Allen *et al.*, 2011). The Central banks are at the helm of

implementing macroeconomic policies by closely engaging with the Ministry of Finance of the various governments in the African countries (Allen *et al.*, 2011). According to a banking report by McKinsey, Africa's banking sector is ranked the second-best banking market in the world (McKinsey, 2018). Metrics used to arrive at this conclusion were in terms of the profitability and growth of the banking system. Buttressing further in the report, the number of Africans who owned active bank accounts rose from 170 million in 2012 to about 300 million in 2017, a phenomenal growth for this economic sector of the continent (McKinsey, 2018).

Concerning the development of the entire banking system in Africa, Allen *et al.* (2011) posit that the development of Africa's banking system is inextricably associated with the branches of foreign banks present in Africa since their presence has bolstered competition within the industry. Thus, this competition has triggered domestic banks to ensure that their corporate governance is effective and efficient. Allen *et al.* (2011) argue further that the financial sector reforms within the countries of these foreign banks have created a large market in Africa, which includes the accompanied entry of these banks.

Despite the outstanding achievements of Africa's banking system, the 2018 report of McKinsey also highlights some of the critical flaws. The first is that the increase in the general profitability of Africa's banking sector is not evenly distributed across the continent. Here, the report highlights that only five countries account for about 68% of the total revenue within the banking sector of Africa (McKinsey, 2018). These countries include Angola, Egypt, Nigeria, Morocco, and South Africa. With the advent of the COVID-19 crisis, analysts of McKinsey have made critical suggestions. They postulate that between the years 2019 and 2021, revenue from the banking sector is likely to experience a 23% to 33% decline. This account does not bode well for the future of the sector.

Further, highly liquid deposits which are short term in nature constitute a significant portion of the financing base for Africa's loan portfolio (Nyantakyi & Mouhamadou 2015). Drawing from the research of Nyantakyi and Mouhamadou (2015), about 45% of African banks have short-term deposits which constitute about 90% to 100% of down payments made by depositors. Consequently, the lending structure of commercial banks in Africa would also be inclined to the provision of short and medium-term loans (Nyantakyi & Sy, 2015). This finding is consistent with the account of Allen and Gale (2007), where they stated that the fundamental structure for the monetary area in African economies is like other developing business sectors where buyers have a cogent inclination for liquidity.

2.4 An overview of Ghana's banking system

The history of Ghana's banking system can be traced back to the colonial era, where provision for financial services was made to the businesses of the British and the entire colonial organization of the then Gold Coast (Antwi-Asare & Addison, 2000). By 1896, a branch of the British West African Bank (which is currently Standard Chartered Bank) was established in Accra (Antwi-Asare & Addison, 2000). The tremendous performance of this bank within the market of the then Gold Coast attracted other foreign banks to also extend their operations to the then Gold Coast (Korboe, 2019). These foreign banks included the Colonial Bank, the National Bank of South Africa, the Anglo-Egyptian Bank and Barclays Bank, which later consolidated to become Barclays Bank (Antwi-Asare & Addison, 2000). Owing to this, the Bank of British West Africa and Barclays Bank were the two major banks who were actively operating within the Gold Coast between the years 1920-1950 (Antwi-Asare & Addison, 2000). To limit the dominance of the two foreign banks within the banking sector, the first local bank, Ghana Commercial Bank, was inaugurated in 1953 (Awuku, 2019).

Ghana's independence in 1957 was accompanied by the establishment of the Bank of Ghana (BoG) (Adjei & Chakravarty, 2012). The BoG had the sole responsibility of managing the Ghanaian currency to ensure stability in the value of the currency (Obuobi *et al.*, 2020). In strengthening Ghana's financial sector, more state-owned banks were incorporated by 1974 (Antwi-Asare & Addison, 2000). These banks included the National Investment Bank (NIB), Merchant Bank, and Agricultural Development Bank (ADB) (Antwi-Asare & Addison, 2000).

Furthermore, the enactment of the financial law in 1989 ushered banks like Ecobank, Allied Bank, Trust Bank, Meridian Bank and CAL Merchant Bank to commence operations (Korboe, 2019). In 1992, a significant number of banks owned by the state were privatized by the Government of Ghana (Akomea-Frimpong & Sebia, 2019). Along with this step, the barriers to entry in the Ghanaian banking industry by the foreign banks was withdrawn; thus, competition within the industry became keener (Antwi-Asare & Addison, 2000). Together with competition being intensified, the saving rate increased, and the provision of financial services was enhanced (Akomea-Frimpong & Sebia, 2019).

In retrospect, the banking sector of Ghana has been embroiled in a crisis which led to the revocation of the licenses of most banks, financial institutions, finance houses and savings and loans companies (Avortri & Agbanyo, 2020). These crises experienced were as a result of the inability of these institutions to comply with the laid down operational regulations which govern the banking sector (Avortri & Agbanyo, 2020). After the crises, Construction Bank, Beige Bank, Royal Bank, UniBank and Sovereign Bank, consolidated after failing to meet the minimum capital requirement of 400 million Ghana cedis, which was set by the Bank of Ghana (Yalley *et al.*, 2018). Currently, the number of universal banks in Ghana is 23. Together with this, there are 144 Rural and Community Banks, 11 Finance Houses, 37 savings and loans institutions and 138 Microfinance and microcredit institutions (PricewaterhouseCoopers, 2019).

In line with the technological advancements in the banking sectors of most economies all over the world, the banking fraternity of Ghana has also witnessed a growth in the provision of digitized financial services (Government of Ghana, 2020). Here, most of the Ghanaian banks have initiated digital modes of payment to ensure faster transactions by customers and to cut down transaction costs (Government of Ghana, 2020). Notable among these banks is Ecobank, who are working together with Mastercard and Visa card to facilitate more convenient mobile payments via the Merchant Quick Response Code (Government of Ghana, 2020).

2.5 The Cash System: Benefits and Challenges

The cash system, for some time now, has been one of the most common and most accessible mediums of exchange used to make every form of business transaction (Sharma & Sumbali, 2014). According to Adinortey *et al.* (2011), the cash system is more prevalent in developing countries. To ensure that there is enough cash within the economy, the central banks have the primary responsibility of printing currencies (Galán & Sarmiento, 2007). The ensuing paragraphs provide literature on the benefits and challenges of the cash system.

2.5.1 Benefits of Cash system

Despite the advent of technological innovations which aim at eschewing cash, proponents of the physical currency system have made compelling arguments which, indeed, provide justifications on why cash should not be avoided. A recent study by Perkins (2019) noted that "cash is a simple, easy and robust payment mechanism that requires no ancillary technologies" (p. 5). Here, he posits that transactions between payers and payees are settled by physically exchanging currencies. Consistent with the argument of Perkins (2019), (Bagnall *et al.*, 2014) elaborate that with cash, traders do not need any form of sophisticated mobile device, scanning device or a card reading machine before they could make payments for transactions. Relatedly, Njue *et al.* (2015) hold that, with the use of cash, traders would be less affected by

unprecedented circumstances like highly disruptive cyberattacks and longer days of power outage which typically affects electronic payment systems.

Kameswaran and Hulikal-Muralidhar (2019) argue that there are no barriers associated with one's accessibility to physical cash. They hold that the use of cash is not limited to certain income groups; thus, whether a person is wealthy or not, he or she still has access to cash. In a study conducted by Achor & Robert (2013), the same claim pointed out by Kameswaran and Hulikal-Muralidhar (2019) was also made. Achor and Robert (2013) add on by stating that the use of cash does not require any form of intensive education, unlike some electronic payment systems, which would require some form of education for users to be able to navigate through the system effectively.

Also, Perkins (2019) asserts that since cash functions as a store of value, which enables users to hold on to it to make future payments, the risks of loss associated with a fall in the value of securities or crisis in financial institutions is less. In agreement with Perkins (2019), Townsend and Silver (2015) add that individuals who are risk-averse and are skeptical about what the future holds for the market and financial institutions would prefer to hold cash, as opposed to adopting other non-cash alternatives which are susceptible to market failures. The next section provides extant literature on the challenges which are associated with navigating through the whole cash system.

2.5.2 Challenges of the Cash system

Despite the advantages which scholars have extensively discussed regarding the cash system, other schools of thought have expressed opposing views which highlight the challenges of the system. Smith and Louis (2010) hold that in instances where unexpected misfortunes like theft, burglary or fire outbreaks occur, users of the cash system become very insecure since a lost currency becomes very difficult to trace or retrieve. Anchoring on this argument, Drehmann *et*

al. (2002) noted that robberies associated with Cash-in-Transit are rising in most developing countries. Here, he notes that cash which is to be stocked into ATM's is more vulnerable to armed robberies, thereby creating insecurity among cash owners. Koekemoer (2015) complements the argument of Drehmann *et al.* (2002) by adding that victims of robbed or burnt cash may lose their entire life savings and investments, thereby creating emotional and psychological pain, which may consequently lead to death.

From the pioneering work of Sharma and Sumbali (2014), it was conclusively proven that there are health implications associated with the use of cash. As strange as it may seem at first glance, Sharma and Sumbali (2014) assert that the paper currency, for instance, is a more comfortable surface on which various types of pathogens are likely to thrive and breed. In addition, Sharma and Sumbali (2014) highlighted some of the unhygienic conditions which are associated with physical cash. Some of them include wetting one's fingers with saliva to count money, keeping physical currency in socks and under one's shoes. Girma and Internationals (2015) also highlight in their study that physical currency is exposed to unsanitary conditions like persons coughing and sneezing in the same hands they use to handle the currency. Allan *et al.* (2018) add on by also elaborating on the fact that microbial organisms are easily transmitted to these currency notes as a result of the negligent and unhygienic actions by some individuals. In a study conducted in Ghana by Tagoe *et al.* (2009), the findings confirm that 100% of the currency notes had pathogenic and non-pathogenic organisms which were present in them. Similarly, findings from the research of Pope *et al.* (2002) postulate that about 96% of the US one-dollar notes were contaminated with pathogenic organisms.

Again, Achor and Robert (2013) argue that there is an enormous cost associated with printing more physical currency into the system. From research conducted by the Central Bank of Nigeria (CBN) in 2012, the findings showed that about 60% of overhead costs in the banking

industry of Nigeria is linked to the distribution and management of physical currency. Consistent with the account of Achor and Robert (2013), Black (1991) makes an additional claim that capital which could be channelled to other productive areas of the economy is spent on the printing of currencies. He adds that such a cost could have been easily prevented by adopting electronic modes of making payments in the economy.

Furthermore, there are certain groups of people who capitalize on the vulnerability of the cash system to secure their personal gains. Here, Immordino and Russo (2018) point out that small businesses in the USA, Europe and developing countries, who solely depend on cash to transact their businesses are accustomed to under-reporting their revenues in order to avoid sales taxes. Ukaj (2014) expresses a similar view by stating that most cash-dependent companies understate profits so that they could pay lower corporate taxes. Adding on to the arguments being made, Sands *et al.* (2017) advance that corporations who pay their employees in cash usually try to avoid social security taxes and income taxes, thereby defaulting the tax ethics. Morse (2015) postulates that tax evasion consequently creates a high deficit for governments since they will depend more on debts to finance developmental projects.

2.6 Cashless economies

According to Udo (2019), a cashless economy is an area within which money is spent by making payments via electronic modes. In such economies, Sreenu (2020) holds that physical cash is not used at all. Coherent with the assertion of Sreenu (2020), Rudresha (2019) advances that "under a cashless system the people in a given country will use no liquid money or paper currency" (p. 62). However, contrary to the viewpoint of Sreenu (2020) and Rudresha (2019), Worthington (1995) noted that a cashless economy does not imply the outright absence of physical cash; however, it denotes a reduction in the amount of physical cash whilst electronic

modes of payment are increased. By these assertions, it can be deduced that a cashless economy is a society where cash is either not used at all or kept to a bare minimum.

Though Akhalumeh and Ohiokha (2012) struggled to arrive at a definition for a cashless economy, their line of thought suggests that in cashless economies, electronic payments are made without any form of cash payments in return. Deora (2018) holds the view that an utterly cashless economy is not a feasible policy. This argument mirrors the perspective of Kiyotaki and Wright (1989), who argue that cash will forever remain a medium of exchange and thus, cannot be eliminated. Drawing from the perspectives of Deora (2018), and Kiyotaki and Wright (1989), both failed to consider the economic structure to put forward their arguments. Here, the economic status of a country will determine whether it can fully transition to become cashless or not (Awuku, 2019).

In getting a brief overview of modes of transacting business under a cashless system, Gajjar (2019) highlights some of the electronic modes of payment. They include e-wallets, mobile wallets, credit or debit card, Unified Payments Interface (UPI) apps, and Unstructured Supplementary Service Data (USSD). For a cashless system to be able to function, Chaudhari (2017) postulates that internet facilities are a significant prerequisite. In this regard, he suggests that the government of countries who intend to go cashless must create an infrastructure for cheaper and faster internet connectivity.

Probing further, Krishna (2019) holds the viewpoint that cashless modes of making payments have existed right from the inception of the whole human race. He noted that the barter system, for instance, was a cashless system since it was an exchange of goods for goods without physical cash serving as the medium of exchange. However, technological advancements have changed the whole narrative of cashless societies. Like Udo (2019) rightly defined, cashless

economies in contemporary times, refer to electronic modes of payments like mobile payments and credit cards.

2.6.1 Benefits of Cashless Policy

Having understood the concept of the cashless policy and how it works, this section would elaborate on the benefits which would be reaped once a country decides to transition into a cashless economy. Drawing from a wide range of literature, Ogbonna and Virtus (2020) posit that cashless systems facilitate faster and more convenient transactions. The argument is based on the fact that payments can be made from the comfort of the home of the customer, without joining long queues to make purchases or dispense cash. Following from this argument, Menaka (2019) adds that under cashless systems, customers would be able to have access to banking services wherever they find themselves.

Furthermore, the cashless policy helps to eliminate many business risks associated with the theft of cash or fire outbreaks (Udo, 2019). Besides, Bloomberg (2014) adds on by stating that the move from physical cash to electronic modes like debit and credit cards becomes a disincentive to Cash-in-Transit robbers who hijack cars to siphon the life savings of people. Smith and Louis (2010) also agree with this perspective and hold that in the event of unexpected occurrences like fire outbreaks and natural disasters, traders will be less bothered about losing their investments (in cash). Since all transactions are fully electronic in a cashless system, traders will still have their savings intact.

In a research to investigate the benefits of a cashless Nigerian economy, Ajayi (2014) advances that vices like corruption and tax evasion cannot thrive under a cashless system. To further explore this argument, Desai (2020) exhaustively expounds on it in his study. He sets the tone of his argument by establishing the statement of the fact that developing countries lose nearly \$ 1.26 trillion to corruption, theft, and tax evasion. Desai (2020) argues that when

everyone in an economy is conjoined in a cashless environment, money outflows and inflows can be easily tracked. Taxpayers would know how their money is spent; thus, transparency would stand tall. Desai (2020) states that when the taxes and contributions of citizens in developing countries are channelled to developmental projects, 1.4 billion people would be lifted out of the threshold of poverty.

One of the instrumental benefits of a cashless system is how it helps to annihilate bacterial infections from paper currency, a situation which is almost getting out of hand (Sharma & Sumbali, 2014). Auer *et al.* (2020) posit that there is no form of physical contact with any form of paper currency or coin under a cashless system. In this regard, bacterial infections which are prevalent because of poor handling of paper currency, would not occur under a system which adopts electronic modes of payment. Assenting to the point which Auer *et al.* (2020) put forward, Visontay (2020) further explains why the unprecedented COVID 19 pandemic is a speedy medium through which most countries are being ushered into cashless economies. He argues that since the World Health Organization (WHO) has pointed out banknotes and coins as mediums through which the virus can be transmitted, it would be imperative for governments to either disinfect these currencies or swiftly adopt a cashless system (Visontay, 2020). In like manner, Aji *et al.* (2020) state that instead of disinfecting currency notes and coins, which may be cumbersome, electronic, and mobile payment systems should be brought to the fore.

2.6.2 Challenges of cashless policy

From a repository of literature on cashless economies, there are several studies which have objected to the implementation of the cashless policy. In a seminal study, Ajayi (2014) contends that just like how physical currency is vulnerable to Cash-in-Transit robberies, the cashless system is sometimes defenseless against cyberattacks. Ajayi (2014) also asserts that when there is a poor implementation of security measures to protect the accounts of e-payment

users, cyber fraudsters will capitalize on this weakness to siphon the life savings and investments of innocent people maliciously. In line with this argument, Ejiobih *et al.* (2019) propose that there should be a series of pilot tests to evaluate the robustness of the electronic payment systems before going ahead to implement them.

Furthermore, Ejiobih *et al.* (2019) opine that the adoption of a cashless system is hampered by high illiteracy rate. Ejiobih *et al.* (2019) further explain that for a person to understand how cashless systems like mobile banking apps operate, they should have some basic reading and writing skills. The Central Intelligence Agency (CIA) empirically investigated the illiteracy rate in Nigeria and found that about 40.4% of Nigerians do not know how to read and write (CIA, 2018). What this means is that all things being equal, when a cashless policy is implemented, about 40.4% of Nigerians will find it difficult navigating through the system. Ajayi (2014) asserts that the cashless system poses a greater risk to elderly illiterate people since they might provide confidential information like their PIN and passwords when seeking assistance on how to make electronic transactions. Beyond this, Uzonwanne and Ezenekwe (2017) suggest that the ICT skills of the population should be enhanced before implementing a cashless policy.

Papadopoulos (2007) is of the view that the implementation of the cashless system is quite expensive since the services of Information Technology (IT) experts would be required to make regular updates to the system. Adding on to that, the National Bank of Rwanda asserts that the mobile money system, another medium for making electronic payments, is quite expensive (National Bank of Rwanda, 2020). Here, the exorbitant cost of the system is as a result of the high charges being made on withdrawals (National Bank of Rwanda, 2020). Owing to this challenge, customers and entrepreneurs who are keener on cost will be reluctant to adopt electronic payment systems.

According to Glennow and Granström (2019), a worrying trend in the cashless system is the issue of privacy of one's transaction. They state that whereas the cash system leaves no trace of who made payments with a particular currency, some cashless payment media capture the personal data of customers. Some of these customers may prefer that some vital information about them is kept anonymous. However, as sophisticated as some of the e-payment systems are, the identity of some customers can be retrieved. (Osho *et al.*, 2016) postulate that in the unlikely event that cyber fraudsters hack the account of a customer, the personal details of some individuals may be retrieved. This may not bode well for such people since information about where they live, their account details, account balance and sometimes their passwords may be hacked.

2.7 Cashless modes of payment

The following are some of the cashless modes of making payments which other countries like Canada, Sweden, Germany, China and France have adopted over the years.

2.7.1 Cheques

Cheques are one of the oldest forms of making cashless payments which are common in almost every country (Menaka, 2019). With the cheque, a person known as the drawer makes an order to a bank to make specified payments to another party (payee). Thus, the drawer or the person who instructs the bank to make remittances debits his or her account. The cheque system makes payments which entail large sums of money more convenient since it eliminates the handling of high proportions of cash (Al-Refai & Nawafleh, 2014). Also, since cheques do not require cashiers to count large amounts of cash, risks associated with miscounting cash would be mitigated (Al-Refai & Nawafleh, 2014). Conversely, the drawer may incur bank charges for dishonoured cheques. Also, the cheque system is susceptible to forgery (Al-Refai & Nawafleh, 2014).

2.7.2 Credit Cards

The credit card is another useful alternative to non-cash payments which gained traction in the 1960s (Bulomine, 2016). Since many countries are heading towards cashless systems, the whole idea of the credit card system is catching on fast. The credit card ensures that individuals can buy goods and services without having to make instant payments. On this account, a credit card is a form of short-term loan. Here, the banks that issue the credit card set limits on the amounts a person can spend. Thus, an individual can make purchases until he or she gets to a limit which will not permit additional purchases. After an agreed period, the issuer of the card provides the credit card holder with an update of the transactions made over the period. The issuer also adds the remaining balance on the account. Despite the convenience and low transaction fees associated with the credit card, it may cause individuals to buy on impulse (Bulomine, 2016). The risk of fraud in the credit card system can also not be ruled out as one of the demerits of credit cards (Bulomine, 2016).

2.7.3 Debit Cards

Debit cards similarly operate like credit cards. However, with debit cards, a person links his or her bank account with the card, thus, when he or she makes purchases with the card, the amount is deducted from the person's bank account (Rozzani *et al.*, 2015). From the way debit cards work, when the cardholder purchases a good or service, the issuing bank transfers the exact purchasing amount from the holder's account to the vendor electronically (Rozzani *et al.*, 2015). The primary distinguishing factor between debit and credit cards is that with the debit card, money leaves the account of the holder immediately after he makes a purchase, whilst for the credit card, money spent is not deducted immediately from the cardholder's account. Here, the holder can spend up to an agreed limit (depending on his/her creditworthiness) and will make payments at the end of a specified period.

Proponents of the debit card hold that it is a quick and convenient way of making contactless payments from a person's bank account since the card links directly with the account (Rozzani *et al.*, 2015). Here, a person will not have to go and withdraw cash from an ATM before he or she can make purchases. Nonetheless, the debit cards only function when a person has money in his or her bank account (Rozzani *et al.*, 2015). Thus, unlike the credit cards, debit card holders cannot obtain credit to make purchases, even when the item is an urgent need. Also, debit card fraud comes in as a disadvantage to the system, mainly when the owner exposes his or her Personal Identification Number (PIN) (Anbalagan *et al.*, 2015). On this account, hackers may capitalize on such situations to empty the owner's account.

2.7.4 Universal Quick Response (QR) Code

The Universal QR Code consists of a pattern of organized black squares on a square grid (Anbalagan *et al.*, 2015). Despite its many similarities with the barcodes, the QR code stores larger volumes of data (Anbalagan *et al.*, 2015). Before the introduction of the QR code, individuals who made purchases with cards found it daunting and quite insecure to give out sensitive details like their registered name on the card, the card number, Card Verification Value (CVV) and expiry name on the card (Anbalagan *et al.*, 2015). For this reason, the QR code system was introduced to minimize information which is made available to vendors before making card payments. Here, the QR code merges all the details (i.e. holder's name, the expiry date of the card, CVV) of the holder and puts them in an encrypted form.

Payments with the QR code system are made in two ways. With the first approach, the cashier at the shop will enter the total transaction amount. From there, the buyer opens the QR scanning app to display his/her unique QR code to the retailer. The retailer then uses a scanner to scan the QR code, which concludes the transaction (Liébana-Cabanillas *et al.*, 2015). With the other method, the retailer will display the QR code on the paper bill. From there, the buyer will

use a QR scanning app to scan the code on the bill (Liébana-Cabanillas *et al.*, 2015). Upon scanning, the buyer then enters the total transaction amount to complete the transaction. So far, the USA, Canada, Singapore, Malaysia, China, and many other countries have adopted the QR system (Liébana-Cabanillas *et al.*, 2015). In Africa, Ghana is the first country to roll out the QR system; thus, the system is gradually gaining traction in other African countries (Hinchliffe, 2020). The QR system is speedy and easy to use since the cardholder's details have been incorporated into the system. However, without an internet connection and a smartphone, payments with the QR system cannot be made.

2.7.5 Mobile Money

Mobile money is an electronic payment medium which enables users to send and receive money from other people, irrespective of their geographic locations (Gutierrez, 2014). With the mobile money system, users need a functioning mobile phone to be able to transfer or receive cash. Here, money is stored in an electronic account which is linked with the user's phone number (Gutierrez, 2014). In making payments, the user can either use the mobile money apps or dial a short code which varies per network (Aron, 2018). After typing the code, the user must follow the prompts which are given by the short code to make payment. The last step will be for the user to confirm the transaction by typing his or her PIN. Apart from making payments for transactions, the mobile money system can be used in purchasing mobile credit as opposed to having to go to a shop to purchase recharge cards physically. One of the significant advantages of the mobile money system is its convenience and ease of use (Aron, 2014). Here, the system is not limited to smartphone users but all users who have mobile phones. Also, those in underserved rural areas which have poor internet connection can still use the mobile money system since it does not depend on the internet (Aron, 2014). Despite these advantages, certain unscrupulous persons capitalize on the mobile money system to scam others (Akomea-Frimpong

et al., 2020). They do so by placing calls to the victims and use calculated schemes to siphon funds from the mobile money wallets of these victims (Akomea-Frimpong et al., 2020).

Together with this, in instances where the mobile network is unavailable for some time, mobile money transactions cannot be made (Aron, 2014).

2.7.6 Unified Payments Interface (UPI) Apps

The UPI is one of the most common digital modes of making payments in India (Gochhwal, 2017). With the UPI, a user can instantly make requests or transfer money to his or her bank account using a mobile phone. Thus, a UPI user will be required to create a unique Virtual Payment Address which becomes the information required for him or her to make a transaction (Gochhwal, 2017). On this account, users can seamlessly execute their transactions with the UPI, without being mandated to share their banking credentials which sometimes contains sensitive information. Gochhwal (2017) posits that with the UPI, the cost associated with executing transactions is low. Together with that, making payments with the UPI is fast since there are no intermediaries involved (Chawla *et al.*, 2019). Consistent with this account, Kakade and Veshne (2017) postulate that "the UPI has made digital transactions for individuals as easy as sending text messages because of its user-friendly interface" (p. 1). In contrast, Thomas and Chatterjee (2017) maintain that UPI will only be useful to individuals who are internet savvy and have smartphones. Given this, persons who are less educated and do not have internet access will face difficulties in using the system.

2.8 Conclusion

From the review of existing literature presented in this chapter, the inference is that there exists a considerable number of studies which have extensively analyzed the prospects and challenges of cashless systems in general. Most of these studies are ground on the understanding of how countries like India, Nigeria, Sweden, and Kenya will cope once they fully transition into

cashless economies. The deduction which one can make out of these findings is that the success of a cashless policy is contingent upon country-specific factors.

Nonetheless, existing literature on the challenges and prospects of a cashless economy in Ghana is limited. Probing further, literature to assess whether Ghana should go-ahead to implement a cashless system is limited. This aspect aligns with one of the objectives of this research, which is to assess if Ghana should go cashless or not.

Again, despite the many country-specific strategies which the literature has provided about how efficiency can be reaped out of transitioning into a cashless economy, there is scant literature which highlights the strategies that Ghana can embrace to make their transition towards a cashless economy more efficient. On this account, the study will employ interviews and questionnaires to generate credible information which will be germane for Ghana's policymakers and other stakeholders involved.

CHAPTER 3: METHODOLOGY

3.1 Overview

This study aimed to investigate the challenges and prospects associated with Ghana moving into the phase of a cashless economy. The study also assessed Ghana's readiness to transition into a cashless economy. Together with these objectives, the study aimed to ascertain the strategies that Ghana could espouse to pave the way for an efficient transition to a cashless economy and leverage the benefits of a cashless economy if the nation should indeed go cashless. Given the underlying objectives, this chapter expounds on the research methods and tools that were adopted to gather and analyze data which provided detailed answers to the research questions. Thus, the chapter provides detailed information under the following subsections: research design, research scope, sampling strategy, data collection, data preparation, validity and reliability, and ethical considerations.

3.2 Research Design

Research design is imperative for every study since it binds the other research elements together (Ahkhtar, 2016). According to Sileyew (2019), a research design is a plan which helps researchers to attain the expected results which their research questions pose to them. Similarly, Wisker (2009) holds that "a research design is an overall plan of action which enables researchers to ask their research questions or test their hypotheses" (p. 89). Given these perspectives, a research design is an outline which details a strategic roadmap on how data will be gathered and analyzed to meet the specific objectives of the research. Saunders *et al.* (2011) classify a research design into exploratory, descriptive, and explanatory research.

Given the context of this study, a descriptive research design was applicable. For descriptive research designs, Dulock (1993) posits that it helps to portray the characteristics of certain situations which are unique to a group of people. Dulock (1993) adds that descriptive

research helps the researcher "to answer questions based on ongoing events of the present" (p. 154). Thus, the research design was used to detail the prospects and challenges of a cashless economy in Ghana. Also, given the nature of the study, both quantitative and qualitative research approaches were used. According to Goertzen (2017), a quantitative research approach helps researchers collect and analyze data in a more structured form, where there is a numerical representation of the data.

For qualitative data, Johnston and Vanderstoep (2009) hold that it enables the researcher to gain a more detailed understanding of the viewpoints of the research participants. Along the same train of thought, Watkins (2012) posits that qualitative research helps explain better certain phenomena that cannot be fully interpreted with only numbers. This current study adopted qualitative and quantitative methods to understand better the prospects and challenges of a cashless economy in Ghana. Furthermore, the research adopted quantitative and qualitative data to assess Ghana's readiness to embrace a cashless system.

The study adopted interviews and structured questionnaires to collate all-encompassing data, which captured all the research questions and objectives. Together with these, the study used online surveys to gain credible insights on Ghana's strategies to thrive in a cashless phase successfully. The surveys also covered information relevant to the challenges and prospects of the cashless policy in Ghana.

For each of the research objectives, the study adopted an expert judgement estimation technique. Benoit and Wiesehomeier (2009) assert that with this technique, individuals with specialized knowledge, skill, or expertise in a particular area of study are reached to provide more insights on a subject matter. Thus, the universal banks, and most importantly, the Bank of Ghana officials, had some level of experience, knowledge, and expertise in the cashless system, which was essential for this research.

3.3 Research Scope

3.3.1 Study Area and population

The research was conducted in Ghana since the study sought to generate unique insights into the country. Johnston and Vandstoep (2009) describe a study population to be "the group of people from which the research sample will be drawn" (p. 26). This means that without a study population, there is no way a researcher can obtain a sample for their study; thus, the study population served as a reference point for the study sample.

For this study, the population was in four groups. These included the universal banks, Small and Medium Enterprises (SME's), Bank of Ghana officials and ordinary Ghanaian citizens who used the cashless system to transact with the banks and SMEs. Since universal banks and SMEs regularly dealt with cash outflows and inflows, the researcher believed that their insights were instrumental to the research questions and objectives. Since monetary policies were in the domain of the Bank of Ghana, the researcher believed that their insights were credible (Quartey & Afful-Mensah, 2014). Furthermore, the researcher believed that the contributions of ordinary Ghanaian citizens who used the cashless system to transact with the banks were very instrumental since they may have encountered the system's issues from a client perspective. These insights aligned perfectly with the objectives of the research.

3.4 Sampling Strategy

3.4.1 Sampling Technique

The study adopted two primary sampling techniques. These techniques included simple random sampling and convenience sampling. However, for the Bank of Ghana, the researcher relied on the institution to assign the officials to be interviewed. From the perspective of Etikan (1996), convenience sampling involves selecting readily available members of a target population at a given time. Simple random sampling, on the other hand, is a type of sampling

where "every member of a population has the same chance of being included in the sample" (West, 2016, p.2)

In selecting the officials from the Bank of Ghana, the researcher relied on the bank to assign the officials whose insights were relevant to the research objectives. However, the researcher selected the Bank of Ghana as the place to conduct the study because the bank consists of seasoned professionals who are well-versed in the country's monetary policies. The researcher acknowledged that the bank's decision to assign the officials since it became easier to get the best and most suitable officials for the study. These assigned officials formed part of a body in the bank known as the Monetary Policy Committee (MPC). Thus, their insights enhanced the credibility of the findings.

Also, the researcher adopted a simple random sampling to select the SME owners and universal bank officials. One major limitation of this approach was how some SME owners were not quickly responding to the researcher's request to fill the forms since they were not available. This made the process time consuming for the researcher since data gathering was to be completed at a specified date.

The researcher adopted a convenience sampling technique for ordinary citizens since the researcher anticipated some challenges in trying to reach some of them. These challenges included some individuals not responding to the researcher due to their busy schedules and some not being ready to fill the forms, leading to a low response rate. From similar research conducted by Krishna (2019) to investigate customer preferences regarding the cashless system, the convenience sampling technique helped the researcher to attain the desired results. Thus, the researcher believed this sampling method was auspicious. The only limitation with this sampling technique was that the responses might not represent the entire population since the sample was only based on those available for the interview.

3.4.2 Sample Size

In conducting a study, researchers must pick a sample from the entire population since not everyone in the population will be eligible for the study. According to Johnson and VanderStoep (2009), a sample is "the subset of people from the population, who will take part in the current study" (p. 26). Thus, since the research was to be conducted and submitted within a specified time frame, sampling was one of the best strategies the researcher could adopt to generate information from eligible participants.

For this study, since the researcher was considering the proximity and availability of participants, a sample of 20 universal banks was used to generate insights on the prospects and challenges of the cashless policy, as well as Ghana's readiness to go cashless. According to Awuku (2019), Ghana consists of 23 universal banks. Thus, using survey monkey, a confidence level of 95%, a 9% margin of error and a total population of 23 was used to arrive at the 20 banks. Thus, structured online questionnaires were randomly sent to 20 banks. A 100% response rate was achieved since 20 responses were generated. The researcher ensured that prior notice was given to these banks before going ahead to issue the questionnaires.

Furthermore, online questionnaires were randomly sent out to SME owners to fill them. Due to some of the limitations of Ghana's record-keeping systems, the number of SMEs in Ghana could not be obtained. Thus, the researcher referred to previous studies similar to this current study to choose an appropriate sample size. Since time was one major constraint in this study, the researcher referred to studies that used time frames similar to this study. Based on the study of Ackah and Vuvor (2011), a sample size of 80 SME owners was used since data analysis had to be completed within 3 to 5 months. Similarly, Amer *et al.* (2020) selected 70 SMEs to conduct their study within the same period. Since this study had to complete data collection and analysis within four months, a sample ranging from 70 to 80 was targeted and deemed feasible.

Thus, after an online survey was sent out, 71 SME owners filled the form. This sample was still within the targeted range.

Additionally, the researcher interviewed two senior staff from the Bank of Ghana. The bank assigned the researcher to these two senior staff since they formed part of a body known as the Monetary Policy Committee (MPC) in the bank. Thus, around the period when the interview was conducted, these two officials were the only available committee members. These two senior staffs were instrumental in providing more insights on Ghana's readiness to adopt the cashless system. Since these staff members had also gained experience in the economic policies of Ghana, the recommendations they provided were instrumental to the research.

In qualitative studies, Guest, Bunce and Johnson (2006) suggest that a sample size of between 15-20 is required to reach the point of saturation. According to Guest, Bunce and Johnson (2006), saturation is "the point where no new information or themes are observed in the data" (p.59). Thus, the researcher contacted 15 individuals who used the cashless system to transact with the banks and SMEs using convenience sampling. Considering the time frame within which the research was to be completed, the least number within the acceptable range had to be selected. Based on this justification, the researcher selected 15 individuals.

3.5 Data Collection

The instruments for collecting data included online questionnaires and audio recordings, which were dependent on the participant's preference. The research considered online questionnaires since most of the respondents preferred them. Also, the online questionnaires were more convenient since they automatically generated the graphs of the responses. The researcher obtained data from both primary and secondary sources. Under primary data, the researcher obtained them by using structured interviews and questionnaires.

With structured interviews, the questions were prepared by the researcher before going to do the interview. For the research objectives, a structured interview guided the researcher in asking questions that did not steer the conversation away from the purpose of the study. Johnson and VanderStoep (2009) observed that "structured interviews are written with probes, transitions, and follow-up questions" (p. 225). The researcher believed that adopting probes and transitions made the interview more engaging and generated more analytical responses than straightforward answers. The researcher obtained secondary data from scholarly research papers and articles. Thus, the researcher ensured that the findings from the literature reflected the research objectives.

3.6 Data Preparation, Collation and Processing

In conducting research, there may be instances where research participants may not understand the questions posed from the questionnaires (Johnson & VanderStoep, 2009). There may also be instances where research participants may not complete the questionnaires within the stipulated time provided in the questionnaires (Johnson & VanderStoep, 2009). Such flaws may be costly to the researcher since time might be spent trying to restructure the research design.

Based on the above, a pilot test was conducted with five research participants to decide on an appropriate time frame within which participants completed the questionnaires. Such an approach helped limit double-barreled questions and biased questions, which may create partial responses. After doing the first pilot test and making the necessary modifications, a second pilot test was conducted with three participants to rectify the identified issues. These participants enabled the researcher to draft a finalized questionnaire which facilitated the execution of the actual study.

After conducting the interviews, the researcher captured the responses of the participants in an audio recording. These responses were transcribed into a Microsoft word document for further analysis. For the questionnaires, the responses were collated and cleaned. Afterwards, the researcher processed the cleaned responses using a Microsoft Excel spreadsheet.

3.7 Data Analysis

After data from the responses had been collated and processed, analysis followed. The study analyzed quantitative data from questionnaires using Microsoft Excel. Excel generated tables, graphs, and charts which were the reference points for further analysis. Following this, major themes and patterns were analyzed from the transcribed qualitative data. From the perspective of Ryan (2016), identifying major themes in a study enables the researcher to highlight information relevant to the research objectives. For the themes which the researcher identified from qualitative data in this study, a detailed analysis was made in response to the research questions. In making a more comprehensive analysis, the responses from this study were juxtaposed with the findings from the literature review.

3.8 Reliability and Validity

The consistency of responses in research reflects its reliability (Johnson & VanderStoep, 2009). In this study, the researcher drafted a standardized online questionnaire that was sent to the research participants. Furthermore, participants were briefed on how to answer the outlined questions in the questionnaire. To avoid discrepancies, the researcher created room for participants to seek clarifications on the questionnaire. Here, the researcher indicated his number and email address, as well as that of his supervisor.

For validity to triumph in a study, researchers must ensure that the study measures what it purports to measure (Taherdoost, 2016). Thus, this study paved the way for validity by adopting

a pilot test which was done in two stages. In preparation for the actual study, pilot testing ensured that the prepared questionnaires did not drift away from the research objectives. Thus, with the help of the pilot test, the necessary modifications were made to overcome any significant challenges which may affect the validity of the research.

3.9 Ethical Considerations

For credible research, it is imperative to establish a set of laid down principles that will ensure that the researcher holds in high esteem the rights, dignity, and welfare of human subjects in data collection (Johnson & VanderStoep, 2009). Furthermore, after conducting research, analysts must uphold ethical principles by ensuring the handling of data appropriately. In ensuring that participants were comfortable and were willing to engage in the research, consent forms were disseminated to these participants append their signatures as proof of their acquiescence. Also, the researcher provided prior knowledge to participants on what the research entailed. Participants were assured of strict confidentiality on any form of information obtained from them.

Furthermore, the researcher ensured that no data was concocted or fabricated to suit his desires. Before the data collection stage of the study, the researcher submitted a proposal to the Human Subjects Review Committee for approval. Since the researcher was interacting with officials from the Bank of Ghana, an introductory letter was obtained. This letter was sent to the bank to seek their consent. The researcher also entreated participants to be candid in their responses to obtain data to help policymakers make well-informed decisions.

3.99 Research Limitations

Due to the limited time frame within which the researcher had to complete the data collection and present the report, the sample of SME owners chosen was not enough to represent

the entire population. Thus, the results were more likely to be biased. In this regard, if the given time frame were longer, the researcher could have gotten the opportunity to gather more insights from a larger population.

Also, the researcher considered interviewing officials from the Ministry of Finance. This consideration was made since the Ministry would have provided more insights on the government's policy initiatives which were to be implemented to accelerate financial inclusion. However, the researcher could not conduct the interview since appointments with the officials were constantly rescheduled. Thus, given the limited time frame of the study, the researcher had to proceed with the data analysis.

CHAPTER 4: RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents and discusses the findings which are aligned with the objectives of the research. Primary data was gathered using online questionnaire and structured interviews. This implies that the research adopted a mixed method approach.

The main research questions which influenced the data collected and the analysis of this data are: (i) What are the benefits and the inherent challenges associated with Ghana transitioning into a cashless economy? (ii) How ready is Ghana to embrace a cashless system? (iii) What strategies can Ghana adopt to facilitate the efficiency of transition to a cashless economy and to harness the total benefits of a cashless system should it indeed go cashless?

In answering the first research question, data in the form of online questionnaires was generated from the SMEs and universal banks. In addition, structured interviews were conducted with ordinary persons who have to make use of a cashless system for daily transactions with these banks and SME. This gave a clear picture on the challenges and benefits of the policy from each stakeholder's perspective. For the second and third research question, questionnaires were used to generate insights from the SMEs and Banks. However, for detailed insights from the perspective of the policymaker, structured interviews were also conducted with representatives from the Bank of Ghana.

4.2 Data Analysis and Findings

4.2.1 Responses from SMEs

Distribution of Companies

SMEs are one of the major groups of people who constantly transact business with diverse customers. Thus, it was imperative to collate their perspectives about the cashless system. However, in doing so, the researcher needed to find out the distribution regarding the types of companies selected for the study. This has been illustrated below:

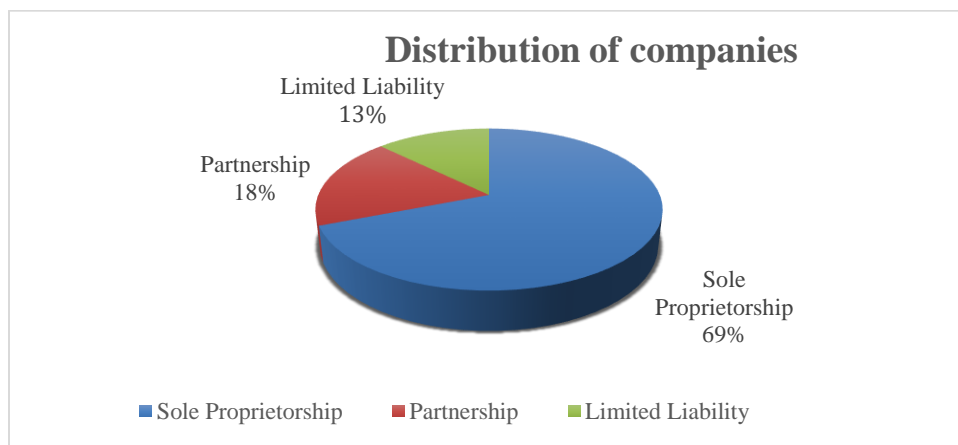


Figure 2.0. Distribution of SMEs by their types

From Figure 2.0 above, the limited liability company owners were the least represented SME with 9 respondents (representing 13%). Following this, 13 respondents (representing 18%) operated a partnership company. The sole proprietorship business owners accounted for majority of the respondents with an overwhelming 49 (representing 69%) respondents. The results suggest that sole proprietorship is the most common business which can be found in Accra. This finding is consistent with the research findings of Appiah-Gyimah and Rosemond (2019) who assert that most of the businesses in Accra are registered as sole proprietorships. This could be as a result of the ease with which such a business can be established or operated as compared to the partnership and limited liability companies.

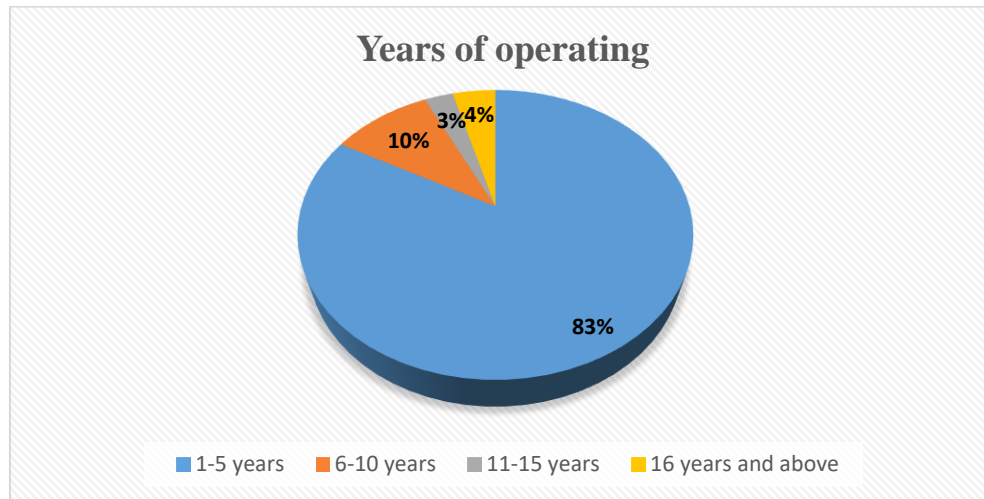
Number of Years of Operating

Figure 3.0. The number of years the company has been in operation

Figure 3.0 above depicts the distribution of the companies by number of years of operating. The figure shows that 3% of the total number of SMEs have been operating between 11-15 years, 4% of these businesses have been operating for 16 years and above. Furthermore, 10% have been operating between 6-10 years, and 89% of the businesses have been in operation between 1-5 years. The results suggest that a significant number of the businesses began operating not long ago. Research from Larnyoh (2020) highlights that from the year 2019, there was a significant increase in new business registration in Ghana since the business registration process had been streamlined. This could have accounted for why many of the businesses have been operating between 1-5 years.

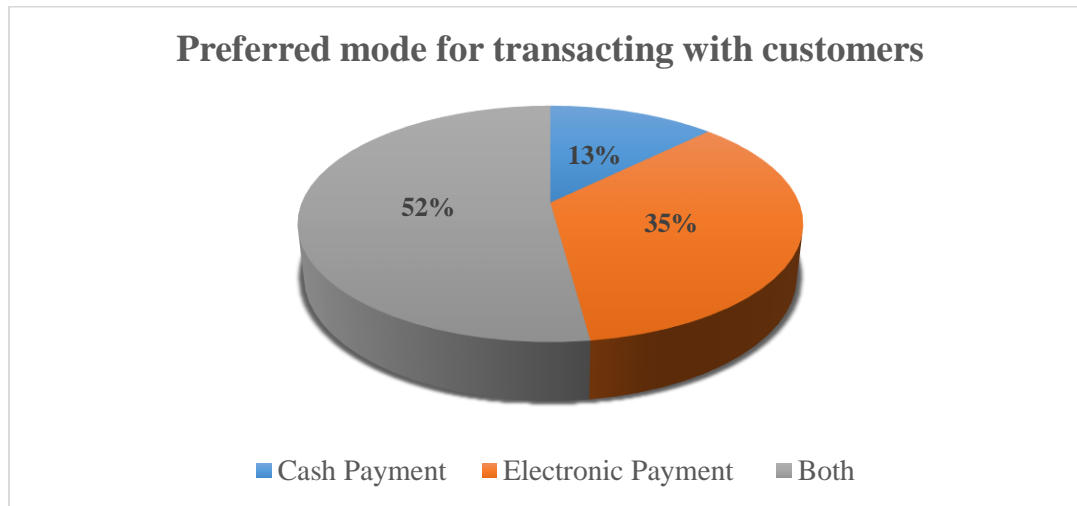
Preference for transacting with customers

Figure 4.0. SME owners' preferred mode of transacting with their customers

Figure 4.0 above provides information which helps to ascertain the medium through which most SME owners would like to transact with customers. Given the results, 13% of the respondents preferred to transact with their customers via cash, 35% preferred to use electronic modes of payment, whilst 52% preferred to rather adopt both cash and electronic modes of payment without limiting themselves to just one. The respondents who chose both were asked to state reasons for taking such a stance. Respondent 4 stated that *“limiting customers to one mode of payment may inconvenience some of them, and you may end up losing some of them especially when the demand for your service is elastic”*. According to respondent 7, *“some of my customers are online and can purchase some of my products online without necessarily meeting me, whilst some of my customers also prefer to make payments with cash”*. Similarly, respondent 39 stated that *“convenience lies in the hands of the buyer, so it is up to him to choose the one which best works for him”*

The responses show that it will be more convenient for owners not to limit their customers to one mode of payment. Even in transitioning into a cashless economy in Ghana,

payment by cash should still be in existence. By making this assertion based on the results above, the argument of Worthington (1995) in the literature review is re-emphasized. Here, he was of the view that the cashless system does not imply the outright absence of cash, but rather keeping it at the barest minimum. Based on the information provided, it was imperative to further understand the benefits and challenges associated with the cashless system which is one of the core objectives of this study. Thus, the next sections provide insights into this objective.

4.6.2 Benefits of Cashless system to SME's

To answer the first research objective, the questionnaire demanded that the SME owners provided answers to some of the benefits associated with the cashless system. Following from this, a five-point Likert scale with a list of benefits compiled from the literature review was provided, and respondents were asked to rate how much they agreed or disagreed with each stated benefit. One of the most interesting aspect of this section was that the benefits highlighted in the Likert scale captured all the benefits which the respondents provided. On this account, the benefits will be analyzed using the themes highlighted in the Likert scale.

✓ Faster and more convenient transactions

The cashless system was found to be a fast and convenient way of transacting for SME owners. When asked to state the benefits which are associated with the cashless system, respondents 13, 17, 38, 61 and 70 stated, "*convenience*", "*very convenient and safe*", "*faster*", "*it's simpler to manage*", "*It is convenient since the exact amount can be sent and there will be no need looking for change*". All these comments simply highlighted that the cashless system was fast and more convenient for business owners. This finding is consistent with the study of Ogbonna and Virtus (2020) who also believe that the cashless system makes transactions faster and convenient. Thus, the finding from this research validates the assertion.

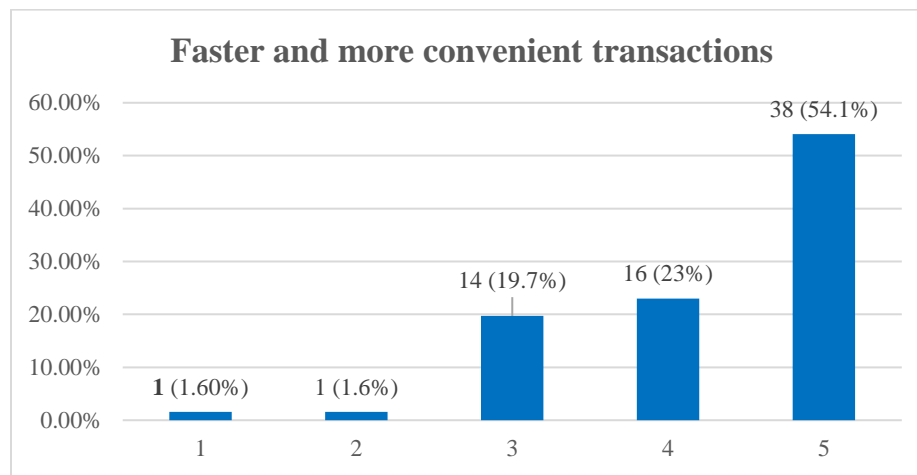


Figure 5.0: Respondent's opinion on whether the cashless system is fast and convenient

To find out whether most of the respondents agreed that the cashless system was indeed fast and convenient, a five-point Likert scale was also added to the questionnaire. On a Likert scale of one to five where one, two, three, four and five represented 'strongly disagree', 'disagree', 'neither agree nor disagree', 'agree' and 'strongly agree' respectively, 1.6% strongly disagreed, 1.6% disagreed, 19.7% neither agreed or disagreed, 23% agreed and 54.1% strongly agreed. Figure 5.0 above is indicative of the fact that majority of the respondents generally agreed that the cashless system was fast and convenient. When asked to provide their reasoning behind the rating provided, the respondents who generally disagreed shared similar sentiments. They were of the view that the electronic payment systems will demand that you key in some credentials before making payment, which they feel is less convenient and delays. Thus, they highlighted that when transacting with cash, one will not have to go through such a long process. In the same vein, Perkins (2019) also held that the cash system was faster and convenient. This finding suggests that in some instances, the cashless system may be less convenient. However, despite this fact, the finding further reveals that majority of the time, it is convenient and faster.

✓ Lower risk of loss from robberies and fire outbreaks

The respondents also highlighted that the cashless system is more secured since robberies and fire outbreaks will not affect a person who stores his or her money electronically. Some of the responses which were aligned with this theme include: “*encryption of the electronic payment app helps to secure your money from robbers*”, “*cash can be easily damaged by fire*”, “*unless they go the extra mile, robbers cannot easily steal money from your mobile money wallet*”.

Respectively, these responses were highlighted by respondents 29, 45 and 63. The comments highlighted here generally imply that one’s money is safe if he or she stores it electronically, instead of holding bulk of physical cash which robbers can easily have access to. Interestingly, findings from the research of Udo (2019) also highlighted the same fact. Here, Udo (2019) also stated that storing money electronically becomes a disincentive for robbers.

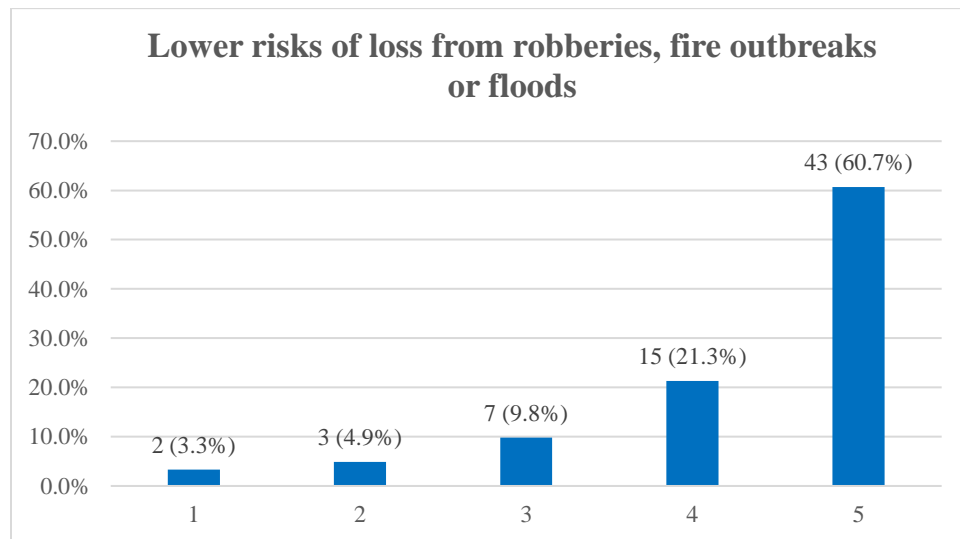


Figure 6.0: Respondent’s opinion on how the cashless system helps to lower risks of losses.

In evaluating whether majority of the respondents agreed that the cashless system really helps to lower the risks of robbery attacks, a 5-point Likert scale helped to make this analysis. As indicated in the earlier section, the Likert scale from 1 to 5 respectively comprised of ‘strongly disagree’, ‘disagree’, ‘neither agree nor disagree’, ‘agree’ and ‘strongly agree’. From figure 6.0,

3.3% of the respondents strongly disagreed, 4.9% disagreed, 9.8% neither agreed nor disagreed, 21.3% agreed and 60.7% strongly agreed. The responses highlighted above indicates that majority of the respondents agree that the risk of losing money from robbery attacks and fire outbreaks is lowered so far as the cashless system is concerned. For further insights, respondents had to provide reasons behind their ratings. The respondents who strongly disagreed respectively highlighted that “*robbers with high technological competence can steal your electronic device and extract all the money from it*”, “*mobile money fraudsters can easily steal all your money stored electronically*”. The respondents who disagreed also provided similar reasons. However, the respondents who neither agreed nor disagreed stated “N/A” simply to advance that they did not have any reason behind the rating they chose. The respondents who also agreed, generally regurgitated the earlier stated responses when they were asked to state the benefits of the cashless system.

From the results, the respondents who disagreed focused their reasons on theft and fraudsters, which is similar to the finding of Ajayi (2014). However, none of them touched on how lower risk of fire outbreaks cannot be described as a benefit associated with the cashless system. This implies that so far as fire outbreaks are concerned, there is no way electronic cash could be affected. However, robbers could maneuver their way to steal money from a person’s electronic wallet.

✓ **Limit on bacterial infections from physical cash**

Respondents 14, 18 and 30 stated the following benefits which fall under the above theme for this section: “*In this COVID 19 era, using electronic payment may be less risky since we can’t tell if viral transmissions can occur through cash*”, “*people keep physical cash in various body parts, which makes me opt for electronic payments*”, “*with*

a cashless system, one is safe from cash which is soiled with unknown substances”.

These comments generally implied that using electronic payment mediums will be much safer as compared to transacting with physical cash which may harbor germs and unknown organisms. On this account, adopting electronic payment modes will curb such occurrences. This finding is consistent with the results obtained from the study of Sharma and Sumbali (2014).

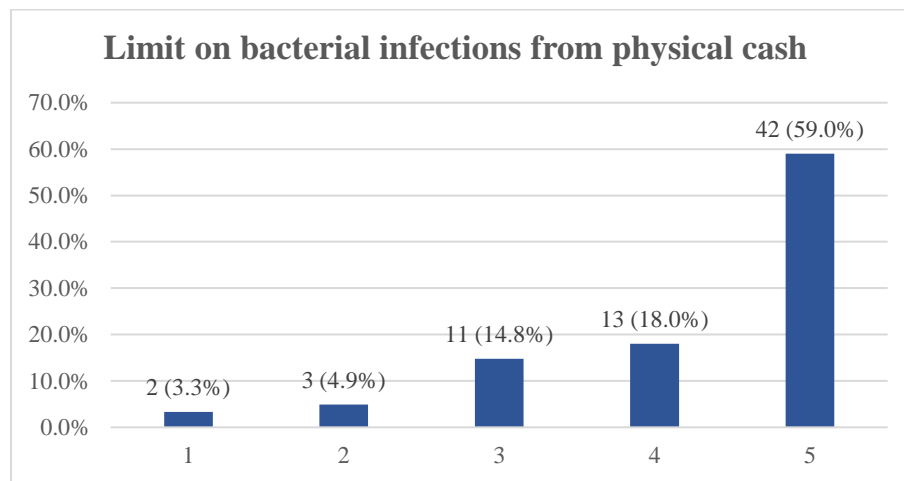


Figure 7.0: Respondent’s opinion on whether the cashless system limits bacterial infections

According to figure 7.0 above, 3.3% of the respondents strongly disagree that cashless transactions help to put a limit to bacterial infections from physical cash. Furthermore, 4.9% of the respondents chose 2 to advance that they disagreed. 14.8% of the respondents neither agreed nor disagreed. However, majority of the respondents generally agreed, with 18% selecting 4 to demonstrate that they agreed, whilst 59% of the respondents strongly agreed. This outcome implies that the majority of the respondents generally agreed that the cashless system is advantageous since it helps to limit bacterial infections which are mostly associated with contaminated bank notes and coins. For the respondents who rated 1, 2 and 3 on the Likert scale, they all had similar comments. They were of the view that they did really not see this as a benefit since once they held or came

into contact with cash, they sanitized or washed their hands afterwards. For the respondents who neither agreed nor disagreed, one of them stated that “*electronic gadgets can also carry bacteria just like cash*”. Though this finding was not captured in the literature review of this paper, further research from the study of Flammia (2018) highlights that cellphones are potential reservoirs for bacteria. For the respondents who stated that they agreed, dominant among their reasons was the fact that as compared to electronic payment mediums, physical cash is subject to a vast number of unhygienic conditions. Thus, the result here implies that despite the fact that some electronic payment mediums could harbor bacteria, the associated risk is less when compared with cash.

✓ **Transactions are easily traceable to the customer**

Respondents 3, 11, 18, and 56 respectively stated the following benefits which were captured in this theme: “*keeps record of the exact amounts paid in by a customer*”, “*mistakes as to the amount received from a customer can be avoided*”, “*you can easily keep track of the customers who owe you*”, “*client payment is traceable*”. These statements serve as evidence to support the finding of Glennow and Granström (2019), who stated that the cashless system captures the details of customers which enables businesses to easily keep track of their transactions. Thus, cashless payment mediums make record keeping of customer transactions very easy.

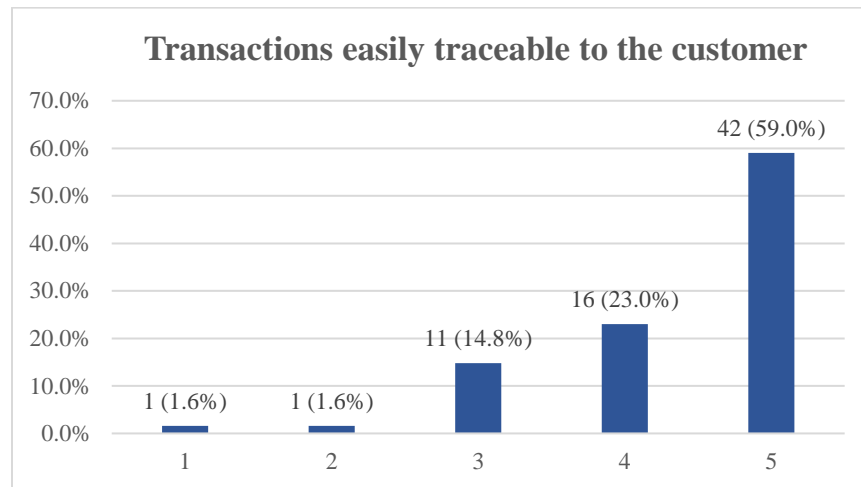


Figure 8.0: Respondent's opinion on the traceability of the cashless system.

From figure 8.0 above, 1.6% of the respondents strongly disagreed whilst 1.6% disagreed. 14.8% of the respondents neither agreed nor disagreed, whilst 23% and 59% agreed and strongly agreed, respectively. The respondents who generally disagreed did not provide any reason for their stance. This could imply that they might not have understood how the traceability of a cashless transaction could be regarded a benefit. For the respondents who picked a neutral stance, one of them gave the reason that “*cash transactions could also be traceable if good record keeping is done*”. However, majority of the respondents agreed that with a cashless transaction, one can easily keep track of the customers and the respective amounts they have transacted with the business. Thus, cashless transactions enable business owners to keep good and accurate records of the transactions of customers. On this account, with cashless transactions, businesses could easily have a very reliable reference point to check the exact amount a customer may have deposited.

4.6.3 Challenges of cashless system to SME's

In response to the first research objective, the SME owners had to provide some of the challenges which are associated with the cashless system. Afterwards, a Likert scale with a list of challenges compiled from the literature review was provided, and respondents were supposed to

rate whether they concurred to the challenges being highlighted. The challenges highlighted in the Likert scale captured some of the challenges which the respondents provided. However, one challenge which the business owners identified was not captured in the Likert scale. The first three themes below are the same themes highlighted in the Likert scale which also captured the responses made by the customers. The last theme highlighted as network problems was the challenge which was not highlighted in the Likert scale. Below are the challenges associated with the cashless system from the SME owners' perspective.

✓ **Expensive**

When asked to highlight the challenges associated with the cashless system, respondents 12, 13, 16 and 68 stated: *“it is costly”*, *“expensive”*, *“charges are high”*, *“sometimes the charges are too high”*. These comments suggest that some business owners perceive the cashless system to be a costly one. Along the same train of thought, the National Bank of Rwanda (2020) also make this same claim that the cashless system’s cost emanates from the high charges associated with payments. Thus, SME owners could incur additional costs when using electronic payment systems to cater for the expenses of the business.

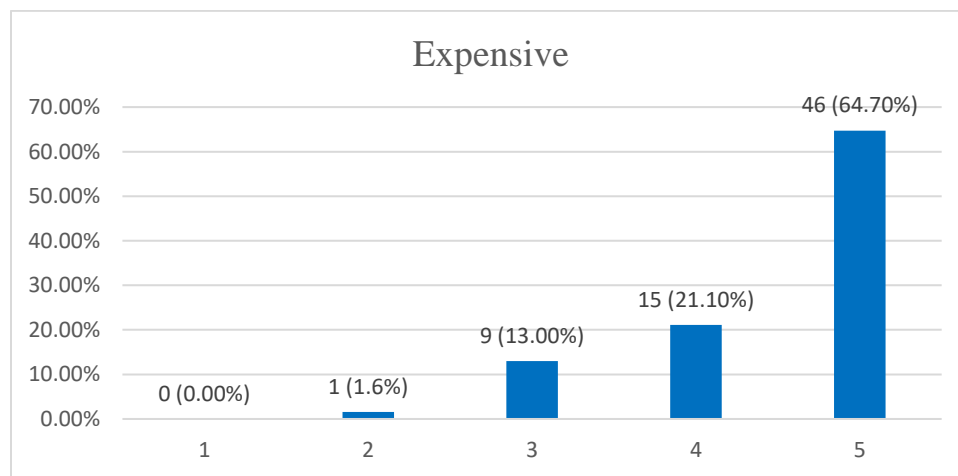


Figure 9.0: Respondent’s opinion on whether the cashless system is expensive

From figure 9.0 above, none of the respondents strongly disagreed that the cashless system is expensive whilst 1.6% of the respondents disagreed. Respectively, 13% of the respondents neither agreed nor disagreed, 21.1% agreed, and 64.7% of the respondents strongly agreed that the cashless system is expensive. Based on these findings, a significant proportion of the respondents agreed with the fact that the cashless system is costly due to the charges involved. For respondent 14 who disagreed, no reason was provided to support his/her stance. However, for the respondents who picked a neutral stance, respondent 21 for instance stated, *“not all electronic payment mediums have high charges, some of them are very affordable, though we cannot dispute that some of them have exorbitant charges”*. This response brings to light on the fact that each electronic mode of payment has its own charges which significantly vary. From the literature review, Bulomine (2016) asserted that there are low transaction costs associated with credit card payment. On the other hand, Alinaghi (2019) suggests that the mobile money system incurs high charges which becomes a disincentive for most businesses to use this service. Majority of the respondents agreed that the cashless system is expensive. Some of the responses which were used to support their rating included: *“the high charges sometimes cause me to rather prefer cash”*, *“this is very true, and charges need to be reviewed”*, *“the charges do not enable us to realize the needed profits, and this is sometimes demotivating”*. The responses here imply that high charges associated with the cashless transactions sometimes becomes a major barrier for businesses to adopt the system. Thus, they will rather opt for cash which they believe is cheaper.

✓ **High risk of cyber attacks**

Most of the respondents stated that they were very insecure with the electronic payment systems since a lot of people use dubious means to siphon money from the electronic systems of users. Under this theme, respondent 25, 28, 32, 34, and 35 stated, *“theft”*, *“system vulnerabilities to attacks”*, *“cyber fraudsters capitalize on this system”*, *“hackers could access*

your pin and clear all your money made from sales”, *“fraudulent acts may cause one to lose all his savings in the system”*. This information suggests that cyber-attacks can affect a business greatly. Here, a business susceptible to the actions of cyber fraudsters have their cash flows affected. Owing to this, the business may even be at the brink of shutting down since the cashflows used in operating the businesses have been lost.

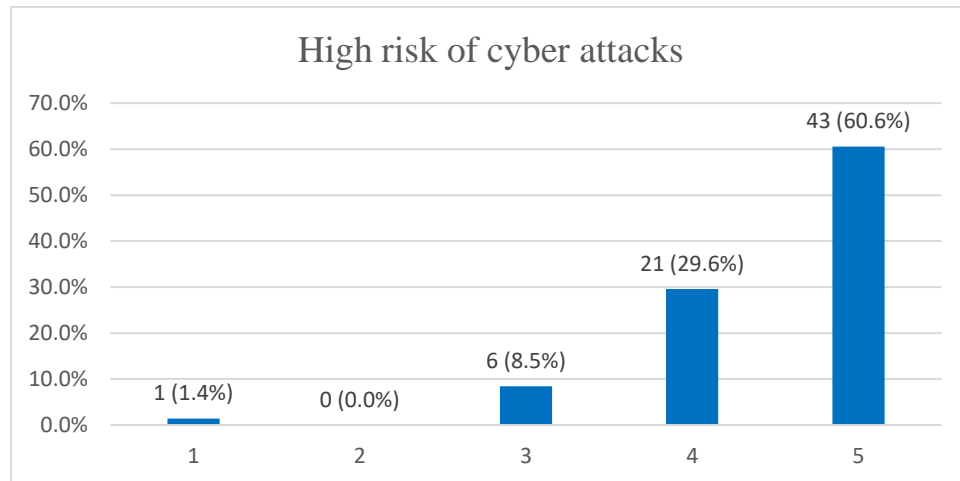


Figure 10.0: Respondent’s opinion on the cashless system’s cyber risks

To find out whether most of the respondents agreed that cyberattacks is a major challenge under a cashless system for SMEs, figure 10.0 provides a vivid illustration. From the figure, 1.4% representing five respondents strongly disagreed. Respectively, 0%, 8.5%, 29.6% and 60.6% of the respondents disagreed, neither agreed nor disagreed, agreed and strongly agreed. Thus, the results advance that majority of the respondents generally agree that cyber-attacks are one major challenge for SMEs under a cashless economy. For respondent 39 who disagreed, he stated that *“with a good security system in place, I don’t see cyber-attacks as a challenge”*. It is interesting to note that none of the respondents disagreed. However, for those who were indifferent, none of them highlighted their reasons. The respondents who agreed and strongly agreed expressed similar pressing concerns highlighting that they agreed because the cost burden

which is left on the business owner when such instances occur is unbearable. Similarly, Ajayi (2014) advances this same argument on the risk of cyber-attacks levelled against businesses who operate under electronic payment systems.

✓ Unfavorable for businesses owners who are uneducated

Findings from this research revealed that the cashless system is less convenient for the uneducated. Respondent 46 stated that “*most business owners within the informal sector may struggle with the system since they are mostly uneducated*”. Within the literature review section, it was stated that cash is predominant within the informal sector of Ghana since most of them were uneducated and thus, did not own bank accounts. This aligns with the assertion of respondent 46. It therefore suggests that the cashless system may end up excluding the informal business owners of the Ghanaian population if the necessary structures are not put in place to include them.

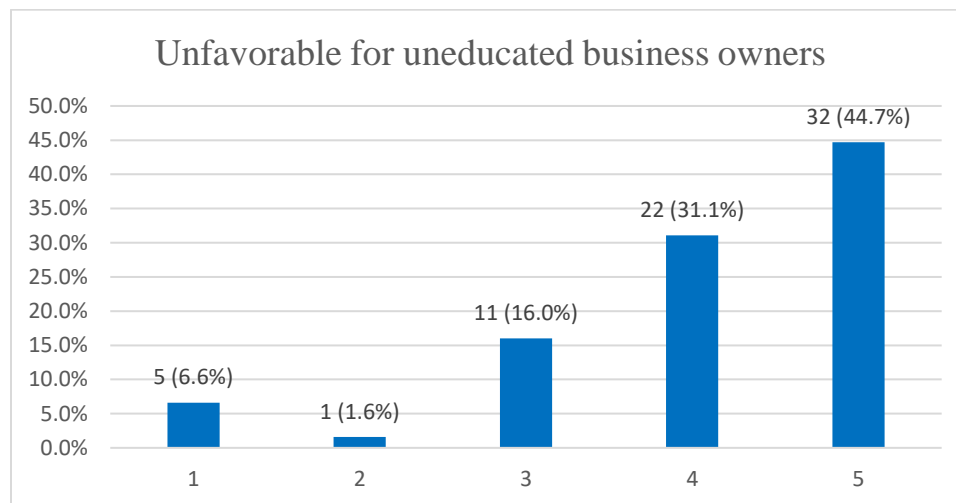


Figure 11: Respondent’s opinion on the cashless system’s unfavorable nature

From figure 11.0 above, 6.6% of the respondents strongly disagreed, 1.6% of them disagreed, 16% of them neither agreed nor disagreed. For the respondents who generally agreed, 31.1% expressed that they agreed whilst 44.7% strongly agreed. For those who strongly

disagreed, respondent 51 stated that “*this is not always true since with the mobile money system for instance, even some of the informal businesses are beginning to adopt it*”. According to respondent 6 who neither agreed nor disagreed, the respondent stated that “*it depends on the system being used*”. These respondents correlate with each other since the mobile money is just one example of the electronic payment system which respondent 51 probably believes is being used among the informal sector businesses. Thus, given the other electronic payment systems which are more sophisticated, they will find it difficult to operate them. This same assertion was made by respondents 56 and 69 who strongly agreed. They respectively stated that “*sophisticated systems will inconvenience the uneducated*”, “*the informal sector businesses owners may be excluded from such a system, considering the nature of the system*”. These respondents suggest that if the electronic system is not built in a user-friendly way, uneducated respondents may struggle in adopting them.

✓ **Network Problems**

Network problems under the cashless system was one of the main challenges which respondents stated but was not captured by the Likert scale. Respondents 44, 50, 58 and 65 respectively stated “*network problems can hinder the progress of such transactions*”, “*network issues*”, “*slow network*”, “*poor internet*”. These responses suggest that when businesses fully adopt a cashless system, network issues may hinder their transactions, and this poses a major challenge to them. Thus, a business owner who may be fully using electronic payment systems will not be able to generate sales for a particular day when the network is down. In line with this information, Aron (2014) asserts that network issues are a major hinderance to the process of transacting under electronic payment systems.

4.4 Responses from universal banks

Universal banks are one of the major groups who make a lot of transactions with clients all over the country. Here, businesses, investors and variety of clients make deposits, withdrawals, investments, and other significant dealings. Owing to this, their responses were instrumental to this research. Before zoning in on their responses which highlight on the core objective of this research, it was imperative to find out how long each of them had been operating. Thus, the figure below provides details into the responses generated.

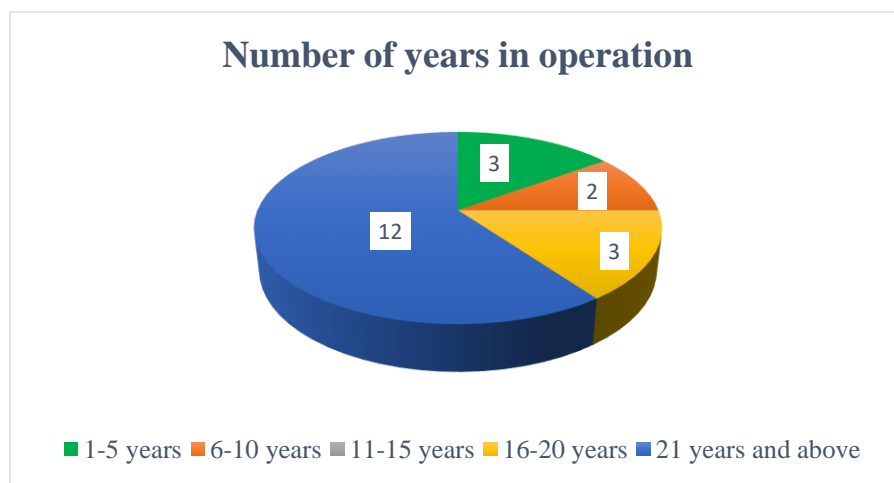


Figure 12.0: The number of years each bank had been operating within Ghana

From figure 12.0 above, three out of the twenty banks have been in operation between 1-5 years. Again, three out of the twenty banks had been operating within a span of 16-20 years whilst two banks had been operating between 6-10 years. Interestingly, twelve out of the twenty banks (representing 60% of the total banks) had been operating for as long as 21 years and above. This suggests that most of the banks had a great deal of experience with regard to transactions being made throughout the country. Nevertheless, it was also interesting to find out that none of the banks operated within a span of 11-15 years in Ghana.

4.4.1 Benefits of Cashless System to universal banks

Again, the researcher needed to find out the benefits of the cashless system from the perspective of the universal banks. Thus, after stating their opinions on some of the benefits, a five-point Likert scale with a list of benefits compiled from the literature review was also provided. Here, respondents were asked to express their level of agreement or disagreement to the stated benefits. In addition, they were asked to provide reasons for their ratings. Like the SMEs, all the responses provided by the participants from the universal banks were captured in the Likert scale, thus, the benefits will be examined using themes from the Likert scale.

✓ Less congestion in banking halls

When asked to state some of the benefits associated with the cashless system, Bank officials 2 (BO2) and 6 (BO6) respectively suggested that “*it helps to control the long queues which are experienced in our banks*”, “*limits the number of individuals who physically transact at the banking halls*”. The responses suggest that with the cashless system, the clients of these banks can transact at the comfort of their homes without necessarily having to arrive at the banking halls.

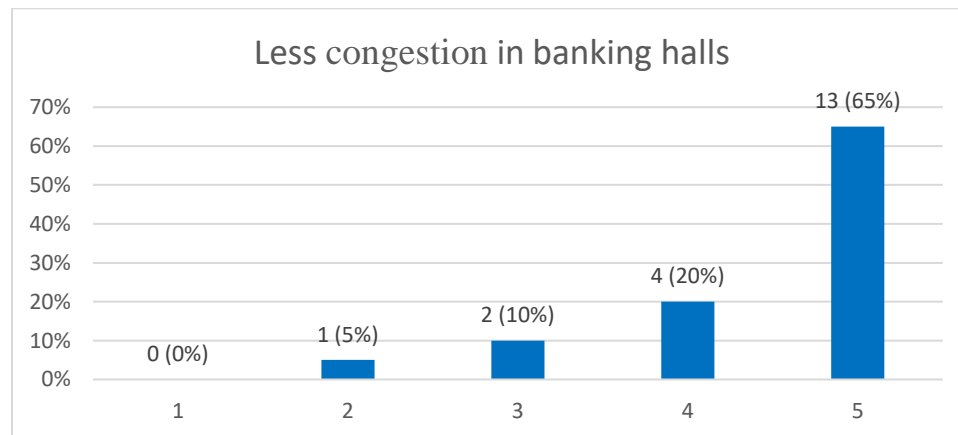


Figure 13.0: Bank’s opinion on the benefit, less congestion in banking halls

In finding out whether each bank agreed with the benefit highlighted in figure 13.0, the results revealed the following: just 1 bank disagreed (representing 5% of the total number of banks). However, two of the bank officials neither agreed nor disagreed. In addition, four banks agreed whilst thirteen banks strongly agreed to this benefit. According to BO3 who disagreed, the official stated that “*the system has rather created a larger number of individuals within the banks since they occasionally walk-in to loge complaints about certain mishaps in the electronic banking system*”. The officials who responded neutrally did not provide any form of reason to their stance. This implied that they were indifferent about the stated benefit. For BO 2 and 7 who respectively agreed and strongly agreed, they stated that “*our bank has really used the e-banking system to reduce the number of people who show up*”, “*based on my observations in the bank since we adopted a cashless mode, I will strongly agree with this benefit*”. These responses suggest that majority of the banks generally perceive the cashless system as a means of controlling the number of clients who show up for transactions.

✓ **Increased bank efficiency**

According to BO19 and BO20, “*the system helps out bank to be more efficient*”, “*efficient to the bank*”. These findings suggest that the system helps the bank to carry out their duties more efficiently. According to Apau *et al.* (2019), the cashless system helps banks to easily transact and meet the needs of a large number of clients since the right systems have been put in place for customers to perform their transactions. This implies that the banks could focus on more pertinent issues whilst the electronic system automatically regulates transactions.

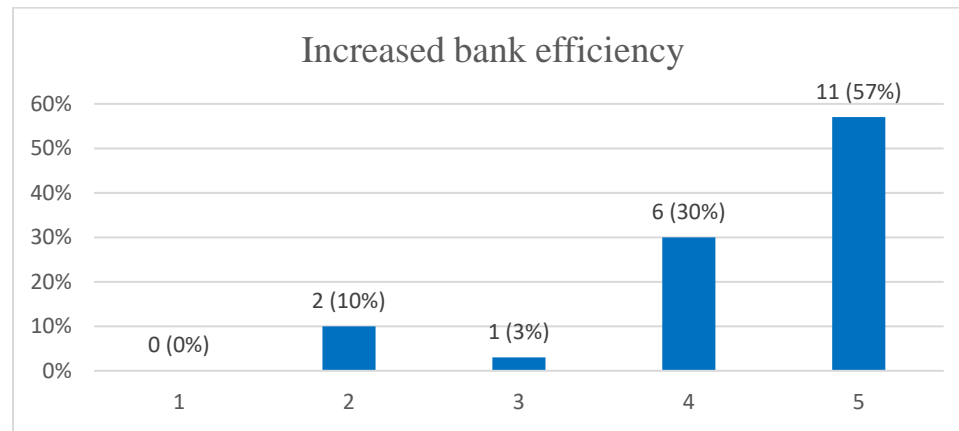


Figure 14.0: Bank’s opinion on the benefit, increased bank efficiency

The outcome of figure 14.0 suggests that none of the banks strongly disagreed, however, two of them disagreed that the cashless system increases efficiency for the banks. Apart from this, only one bank neither agreed nor disagreed, however, majority of the banks agreed to the benefit stated in this section. For BO 11 who disagreed he stated that, “*the bank began to receive a lot of complaints regarding the system which hindered us from concentrating on other important aspects of our duties since time had to be spent addressing customer complaints.*” For BO 16 who strongly agreed, the official opined that, “*the system actually eases the pressure on us and enables us to spend more time putting structures in place to align client needs with our services*”. This implies that with a good electronic banking system, efficiency of the bank is assured.

✓ **Reduction in cost**

Within the questionnaire, BO1, B09 and BO14 respectively stated that “*it saves cost*”, “*reduces cost*”, “*helps the bank to save money for other investment purposes*”. These responses are true since with such a system, it will imply that the number of branches of the bank will significantly reduce since customers will be operating digitally. Owing to this reduction in the

branches, it will imply that the number of staff members will be reduced, and this enables the bank to cut down costs incurred in paying salaries to staff members.

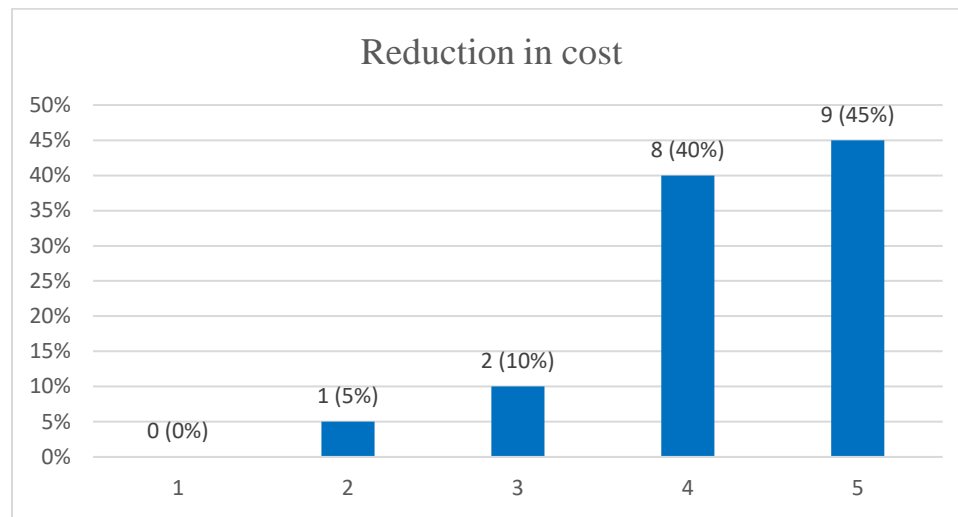


Figure 15.0: Bank’s opinion on the benefit, lesser branches, and ATM

From figure 15.0, only one of the officials disagreed, whilst two of them were neutral. However, majority of the officials agreed that the cashless system reduces cost for the banks. This is represented by eight officials who agreed and nine of them strongly agreeing. The responses suggest that across most of the banks, there is a general agreement that the cashless system reduces cost for them. BO2 who disagreed stated that “*the system is actually expensive to operate*”. Despite this response, the proportion of officials who agreed was generally higher.

✓ Reduction in money laundering

As far as the cashless system is concerned, money laundering is brought under scrutiny. Respondents 15 and 18 asserted that “*money is easily tracked*”, “*no chance to smuggle cash*”. The responses suggest that with the advent of a digitized system which reduces the amount of cash within the banks, cases associated with cash mysteriously smuggled are being brought under control.

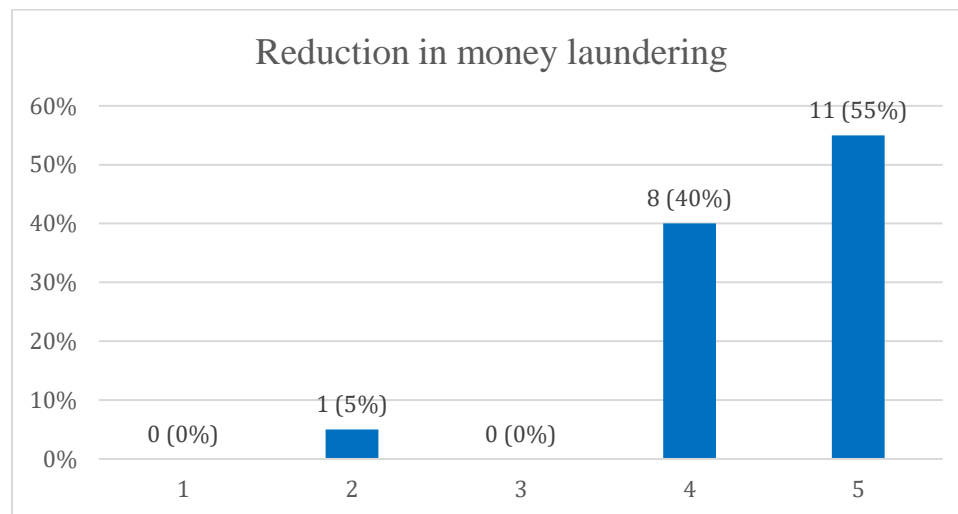


Figure 16.0: Bank’s opinion on the benefit, reduction in money laundering

From the data in figure 16.0, three of the officials were indifferent about the benefit highlighted under this section. Also, eight of the officials agreed whilst eleven of them strongly agreed. Without doubt, this finding suggests that majority of the officials agree that the cashless system is a good control measure for money laundering. Here, since the digital payment system provides a clear data stream of all payments received from financial institutions, individuals who try to siphon funds from the banks will find it difficult. Thus, money laundering cannot thrive under a cashless system. This makes the cashless system an efficient tool for fighting crimes since it helps to conduct criminal investigations pertaining to money laundering.

✓ Lower risks

With the cashless system, the bank officials stated that it helps to reduce a lot of risk which are mostly associated with cash. Respectively, BO1, BO6 and BO7 asserted that “*bank robberies will be minimized*”, “*accidents which involves vans transporting huge sums of cash is curtailed*”, “*robbery attacks on vehicles transporting cash to other branches will be restricted*”.

This challenge aligns with the finding of Koekemoer (2015) who postulated that cash-in-transit

heist make creates insecurity among the banks. Thus, the cashless does not pave the way for such unfortunate instances to occur.

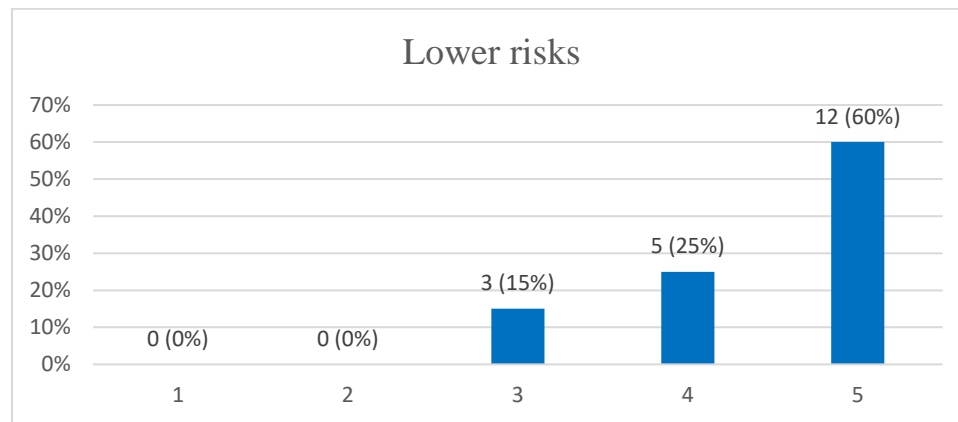


Figure 17.0: Bank’s opinion on the benefit, lower risks

From figure 17.0, three of the bank officials neither agreed nor disagreed, five of them agreed and twelve of them strongly agreed that the cashless system lowers risks which universal banks typically face under the jurisdiction of a cash system. This finding implies that the cashless system serves as a safe environment for banks to perform their tasks.

4.4.2 Challenges of Cashless System to Universal Banks

Using the same approach in highlighting the benefits, the following are some of the challenges which were identified:

✓ **Expensive technological infrastructure**

BO10 and BO17 respectively explained “.....*expensive technological infrastructure*”, “*there is high cost of training staff who will be tasked with monitoring the electronic payment system*”. The responses suggest that with the introduction of this new technology, there will be high cost which will be incurred in the maintenance and monitoring of the system. Also, since

the banks will have to constantly update the system in a way which aligns with the changing needs of their clients, cost will be incurred in doing this.

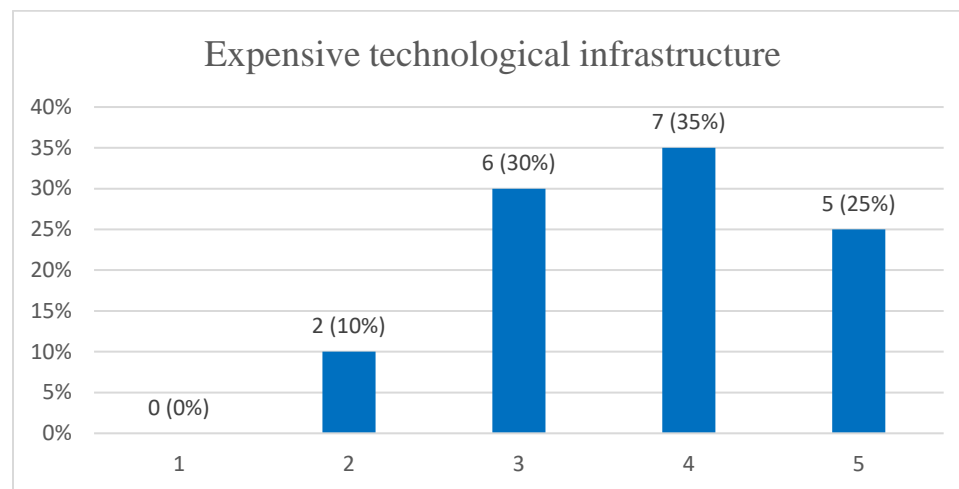


Figure 18.0: Bank’s opinion on the challenge, poor technological infrastructure

From figure 18.0, two of the banks (representing 10%) disagreed, six of them neither agreed nor disagreed. According to BO6, “*the replacement of staff members with technology rather reduces cost and makes the technology less expensive*”. For BO19, “*it depends on the infrastructure being put in place*”. Despite these assertions, majority of the banks agreed that the technological infrastructure associated with the cashless system is expensive. B018 stated that “*our bank chose one of the software giants, IBM, to manage our IT infrastructure for e-payments, and the cost which was incurred was so high*”. Based on the data presented, the IT infrastructure to facilitate advanced financial and customer services to customers is very high. This poses as a challenge to the cashless system for banks. However, it can be arguably stated that the cost is dependent on the infrastructure the bank decides to put in place.

✓ Privacy and security concerns

Information provided by the bank officials revealed that there are a lot of privacy and security issues which the cashless system presents. BO4 stated that, “*hackers may attack the*

systems of the banks if the firewall is not robust enough". BO9 stated that *some corrupt bank officials may gain access to the personal details of clients which gives them access to the e-banking account of a customer*". For BO16, *"unauthorized debiting may occur when the e-banking account of our clients are being hacked"*. The responses above advance that with the electronic banking system, the banks and their clients are susceptible to unauthorized attacks from hackers. These risks are high when the firewall or security measures put in place to protect the e-banking systems are not strong enough.

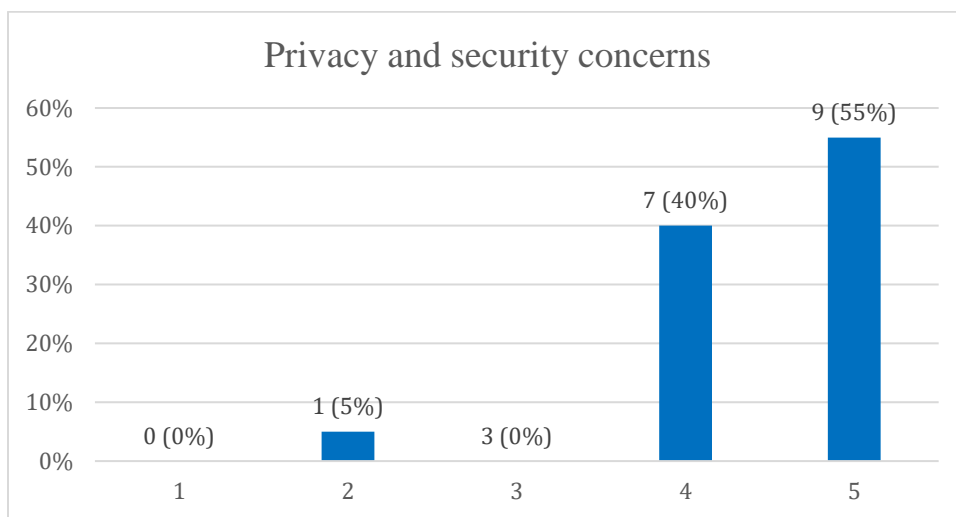


Figure 19.0: Bank's opinion on the challenge, privacy, and security concerns

Furthermore, the Likert scale above indicates one bank disagreeing to the assertion that banks face the challenge of privacy and security concerns under the cashless system. None of the banks strongly disagreed or picked a neutral stance. However, 40% of the banks agreed whilst 55% strongly agreed. This suggests that the privacy and security concerns are a major challenge which banks face under the cashless system. This revelation supports the assertion of Osho *et al.* (2016) who postulated that banks and customers face cyber-attacks which jeopardizes the security and privacy of the cashless system.

✓ Unreliable network

Network problems were not captured in the Likert scale, however, BO5 stated that *“network problems are a big challenge to this system”*. Similarly, BO8 highlighted *“network downtimes”*. With network problems, it will imply that the clients of such banks may not be able to transact during such instances. This is a major challenge since customers who urgently seek to make certain payments to cater for emergencies may not be able to have access to their funds. Owing to this, the banks may lose clients if such issues are persistent and not addressed.

✓ Staff members may be rendered unemployed

BO11 explained *“.....the introduction of the cashless system may cause some staff to lose their jobs since the system may capture some of their duties”*. BO18 also stated that *“It could render most people in the sector jobless since their services might not be needed any longer”*. BO12 also explained that *“ since the cashless system will reduce the number of branches per bank, it will imply that staff in such branches will lose their jobs”*. These responses suggest that employees of the Ghanaian banks are at a high risk of being unemployed when the new system is introduced. This finding further implies that the cashless system may end up replacing some staff members with machines which renders them unemployed.

4.5 Responses from the ordinary citizens

Apart from the banks and SME's, it was also important to glean insights from the “ordinary people” who make use of the cashless system for daily transactions with the banks and SMEs. Thus, the table below shows the demographics of the 15 persons interviewed.

Table 1.0:

A table showing the distribution of respondents by gender and age group.

DEMOGRAPHICS	FREQUENCY	PERCENTAGE
GENDER:		
Males	9	60%
Females	6	40%
AGE GROUPS:		
1-15 years	2	13.33%
16-30 years	8	53.33%
31-45 years	4	26.67%
46 years and above	1	6.67%

From table 1.0, majority of the interviewees were males, accounting for 60% of the total number. With regard to the age group distribution, majority of the interviewees were within the ages of 16-30, implying that majority of the interviewees were at the youthful stage. Following this, 26.67% of the respondents were within the ages of 31-45 years. However, respondents who were 46 years and above were the least represented.

4.5.1 The ordinary person's perspective of the benefits of the cashless system

After the interviews, the responses from each interviewee system were collated and grouped under the following themes:

✓ **Convenience**

With regard to the convenience of the cashless system to individuals who transact, interviewee 2 explained, *“I find this system more convenient since I can transact at any place and any time without having find cash before I can be able to purchase what I need. I will just have to log in to my account using my phone and I am good to go”*. According to Interviewee 6, *“I have access to my e-banking account wherever I find myself, thus, I do not need to go to a specific bank before I can obtain money to make purchases”*. For interviewee 14, *“using e-payment systems to purchase items which are highly expensive is convenient for me since I do not need to carry bulk amounts of cash in brief cases to make my payments. I just need to make a tap on my device and purchases will be made.*

The responses above suggest that customers who transact daily with banks and SMEs view the cashless system as a convenient means of making transactions. Here, the ease with which transactions are made under this system makes it an ideal one for them. In connection with this assertion, Ogonna and Virtus (2020) argue that the cashless system is a convenient way of transacting.

✓ **Risks in obtaining counterfeit money is mitigated**

Interviewee 5 stated, *“with such a system, I know I am shielded from the risks associated with unknowingly obtaining counterfeit money which becomes a cost to me”*. This finding suggests that since payments are made online, the risks associated with a customer given counterfeit notes as a change in return for purchases made is mitigated. According to Maurya (2019), one of the main reasons why cashless economies emerged was because of the hike in

the number of counterfeit notes which were circulating within most economies. Thus, the cashless system limits the power of individuals who print counterfeit notes in various denominations to swindle others.

✓ **Less chances of losing money to robbers or disasters**

Interviewee 4 stated that *“if I am even carrying huge sums of cash to either go and deposit it at the bank or use it to make purchases in the market, I feel very insecure since I may be attacked at any time. As such, I feel safe carrying my mobile phone or credit card around to make transactions since I know even if any of them is stolen, it will not be easy to clear the money in my account.* Interviewee 9 explained, *“If in the unfortunate event that my house is destroyed by a fire outbreak, at least I am assured that my money is intact since it is not kept in the form of physical cash which could easily be destroyed by this fire”.* For Interviewee 13 also, *“with a cashless economy, I believe robbery attacks will reduce since these robbers will be aware that they won’t find any cash on their targets”.*

Drehmann *et al.* (2002) states that under the cash system, victims of robbery attacks and fire outbreaks may lose their entire life savings as a result. In line with the findings above, the cashless system serves as a defense mechanism which ensures that even in unfortunate events, customers will not lose their entire investments and life savings. This is why customers perceive it to be advantageous.

✓ **Easier tracking of expenditures**

Interviewee 1 also believed that the electronic payment system for him, enables him to track all his expenditures. He stated, *“it helps me to track my spending, thus, I will not be wondering where all my cash passed”.* Similarly, Interviewee 3 explained, *“With a cashless*

system, I can always revisit my account to know how I spent my money. However, using cash does not allow that, unless a conscious effort is made to record all my spending”.

The findings above imply that an individual who is curious about how expense were incurred over a specified period can always fall back on the electronic systems where transactions were made. The finding was also less biased to acknowledge that individuals who use cash could do same, however, they will have to make a conscious effort to track their expenditures. Thus, the e-payment systems are more convenient for customers to track their spending.

4.5.2 The ordinary person’s perspective on the challenges of the cashless system.

✓ Transfer errors

For interviewee 7, *“the cashless system can be sometimes dangerous since if I do not key in the right details of whoever I am transferring cash to, I might end up sending it to the wrong person. If you are lucky to get a good person, you may get your money back, if not you will be at a great loss”*. According to interviewee 15, *“If you are not careful with your mobile money transfers, you will mistakenly send it to the wrong destination. I experienced an instance where I was making a mobile money transfer and not knowing, I made a mistake with the last digit, thus, sending the money to the wrong person. It was rather unfortunate that the person I sent it to, had also borrowed money from MTN mobile money, thus, as soon as I sent the money, MTN automatically deducted it from his account. In the end, I was not able to retrieve the money.*

The findings above suggest that without exercising vigilance in transferring money via electronic systems, an individual may make wrong transactions. This becomes a major

challenge since a person may end up losing large amounts. On this account, a cashless system could be sometimes risky.

✓ **Overspending**

For interviewee 11, *“the cashless system sometimes induces overspending since with the e-payment cards, the pain felt in removing cash to pay for your transactions is not felt.*

Interviewee 6 also stated, *“With cashless payment systems like the credit cards, I do not immediately get updates when I make a purchase. These updates are made at the end of the month. Thus, a person could use this as an opportunity to overspend until the final bills arrive”.*

This finding suggests that with particular online systems like the credit card, a person may be induced to spend more than he or she will do when cash is used. This finding validates the assertion made by Bulomine (2016) who postulated that given the nature of the credit card, an individual may end up buying on impulse.

✓ **Scams**

According to interviewee 8, *“Scammers leverage on this system to fraud a lot of people. This creates some form of insecurity when using the systems. For instance, fraudsters call and claim to have transferred money into your account when they have not”.* Interviewee 12

explained, *“Some hackers are very good to the extent that they take advantage of the compromised credentials of customers, hijack their original accounts, and furthermore make transactions in the name of the original owner of the account”.* This finding aligns with the research of Osho *et.al* (2016) who asserted that fraudsters retrieve the personal account details of customers and begin to operate the accounts of these customers. Similarly, Akomea-Frimpong *et. al* (2020) stated that scammers could place direct phone calls to defraud individuals. Owing to this, some individuals will be deterred from adopting a cashless system.

✓ **Inaccessible to certain groups of people**

Interviewee 6 stated, “*people with no educational background will not be able to adopt this system. Even if they are able to adopt it, there are some simple transactions they might not be able to make since they will have no clear understanding of the inscriptions in the payment systems*”. Interviewee 11 also stated, “*Rural folks will be left out of the cashless system since their areas may not have the necessary structures to accommodate this system*”. Interviewee 13 also added, “*With the cashless system depending more on a good internet connection and availability of a good network, those in remote villages cannot go cashless*”

With the cashless system, Ejiobih *et al.* (2019) assert that illiterates will find it daunting adopting it. Thus, the findings in this section align with the argument of Ejiobih *et al.* (2019). Thus, it implies that the less educated people are naturally excluded from the cashless system, and this widens the inequality gap. This is because these illiterates may not have any form of IT background or are not even conversant with the way smart phones operate. Also, the findings are in line with the argument of Uzonwanne and Ezenekwe (2017) who suggested that poor internet infrastructure in rural areas limits their chances of forming part of the population which will be transitioning into the cashless phase.

4.6 GHANA’S READINESS TO ADOPT A CASHLESS SYSTEM

Ghana’s readiness to adopt the cashless system has been detailed in the ensuing sections:

4.6.1 SME’s Readiness

Using questionnaires, the SME owners were asked to answer the question, “is your company ready for a cashless system?”. The distribution of the responses are highlighted in figure 20.0 below:

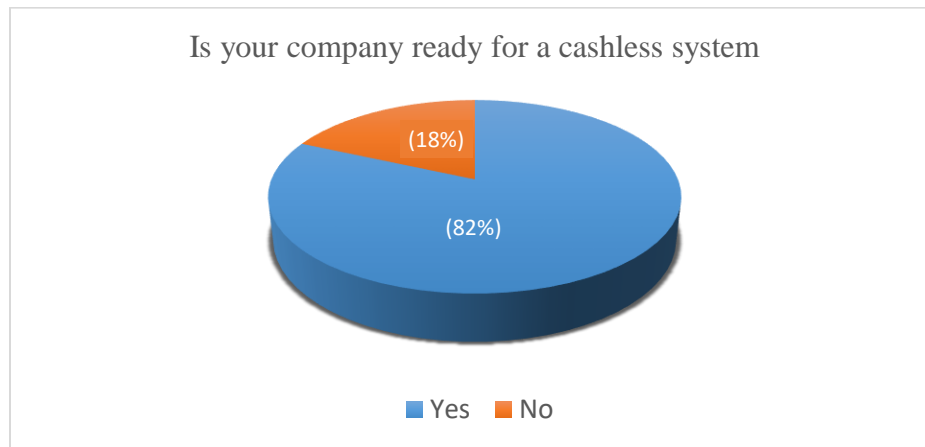


Figure 20.0:SME's readiness to transition into a cashless economy

From figure 20.0, a significant number of the SME owners believe they are ready to transition into a cashless economy, whilst few of them do not feel ready to transition into a cashless. Those who believed they were ready formed 82% of the total number of respondents whilst the rest (18%) were not ready. Furthermore, the questionnaire asked the respondents who answered 'no' to provide reasons for the stance they picked. According to respondent 2, *"My business is not ready to go fully for the cashless system. This is because of my customer base"*. Respondent 3 stated, *"Most of my clients are not in the digital economy (informal sector)"*. For respondent 6, *"because of the nature of our business, physical cash has to be collected"*. Respondent 13 also stated, *"Because we serve a lot of rural folks who do not have any form of knowledge in technology and are accustomed to cash usage"*.

The responses above suggest that the SME owners who are not ready to transition into a cashless economy attribute it to the nature of their business. Thus, they were of the view that majority of their customer base were in the informal sector. Therefore, moving cashless will not favor them since they may lose valuable customers to it.

4.6.2 Universal Banks' readiness

Using questionnaires, the Universal Banks were asked to answer the question, "is your bank ready for a cashless system?". The distribution of the responses are highlighted in figure 21.0 below:

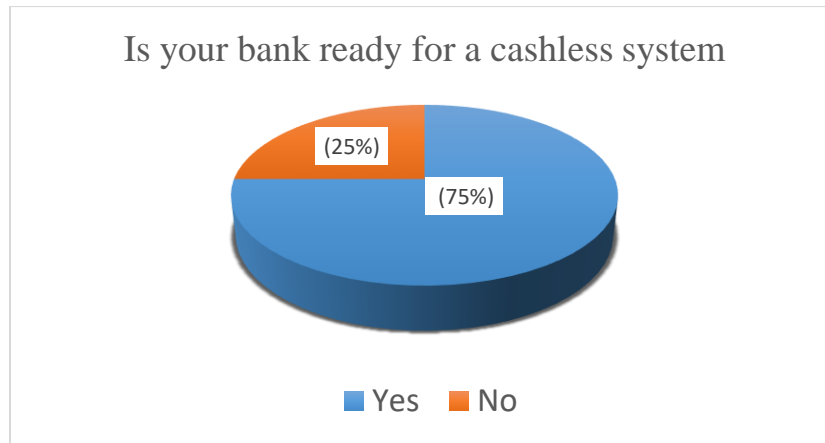


Figure 21.0: Universal banks' readiness to transition into a cashless economy

From figure 21.0 above, universal banks are generally ready to transition into a cashless economy. Here, 75% answered 'yes' to the question whilst the remaining 25% answered 'no'. For those who believed they were not ready, B05 stated, "*We still have to put in place structures and systems to enable the bank fit and meet the constantly changing financial society*". B09 explained, "*we are still in the process of implementing some modules of cashless platforms*". For B013, "*Despite the good IT systems available in our bank, there is the need to constantly upgrade them to match up with the increasing number of products and services to be provided*". B018 also asserted, "*We have to try upgrading our systems to fully fit and align with this new world of transacting*".

From the findings above, the Universal Banks are generally ready to transition into a cashless economy. For those who are still not ready, they stated that they still needed to upgrade

their systems and modify their operations to align them with the needs of their clients. Thus, they still feel without these structures put in place, they cannot confidently state that they are ready.

4.6.3 Bank of Ghana perspective on Ghana's readiness

The researcher was assigned to two members of staff at the Bank of Ghana. This assigning was done by the bank and was based on the availability of these officials at the period when the interview was conducted. Both of the staff members were chosen because they formed part of a body known as the Monetary Policy Committee (MPC) in the bank.

When asked to evaluate Ghana's readiness to transition into a cashless economy, Interviewee 1 stated, *"I can say that Ghana is ready to go cashless. We just have to put a few things in place, and everything will be fully functioning. With a system like the QR code, which was introduced recently, at least 13 banks out of the 23 banks have been able to interact their systems with the QR system. What is needed now is for most of the customers to link their mobile apps to their bank accounts. Also, financial institutions are in the process of making the QR code decor available to retailers so that individuals can be able to scan. Together with this, there is still more room to create more awareness and promotion on the e-payment systems"*

Interviewee 2 also explained, *"Ghana is to some extent, ready for a cashless system, however, fintech's, banks and other corporate bodies are still in the process of adopting the system. The Central Bank has also been able to implement cyber security frameworks and procedures which financial institutions must comply with. Recently, the GHIPSS also purchased brand new servers which are robust enough and could last for close to 10 years."*

From the findings stated above, the Bank of Ghana believes that Ghana is ready to go cashless, however, there are some processes which are still being implemented. Thus, Ghana will be fully ready when these systems have been finally implemented. These results imply that

despite the fact that Ghana still needs some systems to pave the way for a cashless system, the available infrastructures are enough to accommodate the cashless system.

4.7 STRATEGIES GHANA CAN ADOPT FOR AN EFFICIENT TRANSITION

For Ghana to efficiently transition into a cashless economy, there is a need to generate insights from two groups of people. Those who will be actively involved in processing transactions (universal banks and SME owners) and policymakers (Bank of Ghana). The ensuing paragraphs analyze the responses to this research objective.

4.7.1 SME'S responses on the strategies

For the SME's, respondent 16 stated, *"The government should scrape off mobile money charges"*. According to respondent 21, *"To reduce the charges on the payment mode and also to tighten it security"*. Respondent 23 also stated, *"I think the cashless transfer tariffs should be reduced to encourage others to employ this mode of payment"*. For Respondent 32, *"Government should partner with the network service providers as well as the banks so that they reduce the charges associated with transacting"*. According to respondent 40, *"Government must educate the public especially rural folks and try to improve their accessibility to good network"*.

Within the questionnaire, it was realized that most of the respondents were more concerned about how the charges would be reduced. This finding came as no surprise since the very first challenge which was pointed out by the SMEs was how expensive the cashless system was to them. Together with this, the finding suggests that government should be keen on adopting strategies which will ensure that those in the rural areas are not excluded in the new system.

4.7.2 Universal Banks responses on the strategies

According to BO3, *“Government must put in more measures to make banking a better and easy one”*. For BO4, *“Government should ensure that in putting down structures which will limit the use of cash, people will not lose their jobs in the event.”*. Also, B08 asserted, *“Internet banking should be relatively cheaper and accessible to all”*. Furthermore, B09, BO12 and BO15 respectively stated, *“Design a good database system as well as train more IT experts who will protect these systems from the malicious activities of fraudsters”*, *“Promoting the use of technological advancements in schools”*, *“More formal and informal education in the form of advertisement on TV and radio platforms will undoubtedly help citizens to be well sensitized”*

From the responses stated by the Universal Banks, it was evident that they were concerned about maintaining the jobs of their people whilst the cashless system is implemented. They were also keen on having a good database system with experts who are well-versed to manage them. Adding on, just like the SMEs, they believe that more sensitizations should be done. These findings suggest that Ghana’s transition to a cashless phase is generally hinged on a number of factors from the perspective of Universal Banks.

4.7.3 Bank of Ghana responses on the strategies

When asked to provide some of the strategies which Ghana could adopt to facilitate the efficiency of transition to a cashless economy, interviewee 1 was of the view that more awareness should be created for people to know, understand, and appreciate the cashless system. He simply stated, *“more awareness about the system is needed”*. Given this, all the stakeholders including the SMEs and the educated who are knowledgeable about the system have a role to play in making it known to the general public.

According to interviewee 2, *“the banking laws and cyber security frameworks and procedures must be strictly enforced by the government”*. Earlier in the paper, the second

interviewee from the Bank of Ghana stated that the central banks already implemented cyber security frameworks for financial institutions. Thus, though these frameworks have been implemented, their effectiveness will be felt when the government strictly enforces the law to ensure that any institution which goes contrary will be brought to book. In doing this, other stakeholders who use the cashless system will be protected.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Research

This chapter recapitulates the research problem, questions, objectives, methodology and findings associated with the study. The chapter furthermore draws conclusions that are apposite to the findings of the study. For the cashless system to thrive within the Ghanaian economy, this chapter provides practical and germane recommendations to the stakeholders identified in the study. The study also provides suggestions for future researchers conducting studies on the cashless system within the Ghanaian context.

Given the heightened age of technological advancements, most economies have already adopted the cashless system, whilst some are taking steps to adopt a cashless system. Owing to this, a body of research has analyzed the benefits and challenges of the cashless system. While this is true, there is not enough research on the cashless system in the Ghanaian context. Accordingly, the study posed the following questions. (i) What are the benefits and the inherent challenges associated with Ghana transitioning into a cashless economy? (ii) How prepared is Ghana to embrace a cashless system? (iii) What strategies can Ghana adopt to facilitate the efficiency of transition to a cashless economy and harness a cashless system's total benefits should it indeed go cashless?

Given the research questions stated in the previous paragraph, the following objectives guided the entire research. (i) To outline the benefits and the inherent challenges associated with Ghana transitioning into a cashless economy (ii) To ascertain Ghana's preparedness to embrace a cashless system (iii) To determine the strategies Ghana can adopt to facilitate the efficiency of transition to a cashless economy and to harness a cashless system's total benefits if Ghana indeed goes cashless.

The study adopted a mixed-method research approach where online questionnaires were sent out to 71 SME owners and 20 Universal Banks in Ghana. Interviews were also conducted with two Bank of Ghana officials and fifteen ordinary citizens who use the cashless system when transacting with banks and SME's. Based on the data gathered from the questionnaires and interviews, the results and analysis section interpreted and provided more insights in an understandable way.

5.2 Conclusion

5.2.1 Descriptive Statistics

The study gleaned insights from SME owners, out of which 69% were sole proprietors, 18% were in a partnership business, and 13% owned limited liability companies. For the universal banks, twelve of them had been operating for over 21 years, and three had been operating between 1 to 5 years. Similarly, three of the twenty universal banks had been operating between 16 to 20 years, and two banks had been operating between 6 to 10 years. Furthermore, 60% of the ordinary citizens interviewed were males whilst the remaining 40% were females. The two officials from the Bank of Ghana who were also interviewed, formed part of a body known as the Monetary Policy Committee.

5.2.2 Major Findings

🚩 Benefits of the cashless system

Based on the study's findings, the cashless system's benefits differed among the SME owners, universal banks, and ordinary citizens. Nonetheless, some benefits were common among the stakeholders. From the perspective of the SME owners, the cashless system is faster and more convenient. This finding aligns with the study of Perkins (2019), who also believed that the cashless system is faster and more convenient. Together with this, the SME owners asserted that with cashless transactions, risks associated with losing physical cash to robbery attacks and fire

outbreaks are alleviated. In the same vein, Ajayi (2014) also posited that fire outbreaks could not affect money that has been stored electronically. The study also revealed that the cashless system helps to attenuate the rampant transmission of bacteria that is dominant in a cash-based system. In line with this finding, Sharma and Sumbali (2014) also found out that cash harbors many bacteria. Thus, with an e-payment system, less cash will imply a lower bacteria transmission rate typical in banknotes and coins.

Furthermore, the findings revealed that the cashless system reduces the long queues which banks experience at their various branches. Here, since customers can transact from their homes' comfort, they may not need to be present at the banking halls before making a transaction. Furthermore, the findings revealed that with the cashless system, banks become more efficient and can cut down their operating costs and track all forms of money laundering that may occur at their premises. On this account, universal banks could use the cashless system to advance their operations and boost their performance.

For ordinary citizens, the cashless system provides some form of convenience to individuals who make purchases since they may not have to carry bulk cash in briefcases to make simple transactions. Consistent with this account, Ogbonna and Virtus (2020) asserted that individuals who transact with businesses are confident in the convenience the cashless system brings. Ordinary citizens also believe that the cashless system helps to track their expenses and shields them from the risks associated with obtaining counterfeit money. Similarly, Vaidyanathan and Mary (2020) suggest that the cashless system helps individuals to easily track how much was spent at a point in time.

Challenges associated with the cashless system

The findings from the study revealed that the cashless system is expensive due to the charges incurred in making transactions. On this account, SME owners are not incentivized to use it. This exact finding was revealed in the study of Alinaghi (2019), Bulomine (2016) and Papadopoulos (2007). Also, the findings revealed that the cashless system is susceptible to cyber-attacks and network issues, as highlighted in the thesis of Awuku (2019).

Furthermore, the findings suggested that some universal bank officials were likely to lose their jobs once the cashless system is fully implemented since their services may no longer be needed. The literature review section of this study did not capture this information. However, contrary to this finding, Mieseigha and Ogbodo (2013) suggested that the cashless system is likely to create more jobs for universal bank officials. The study results further indicated that there would be high costs associated with procuring new and advanced technological infrastructure within the cashless system. In line with this finding, Chizoba and Anthony (2016) also make the same claim and state that such an instance may compel the banks to downsize their staff, thereby creating unemployment.

Also, the findings revealed that the cashless system might be risky since individuals may end up sending vast sums of money to the wrong person. Furthermore, people may be induced to overspend when payments are made electronically, and scammers may attack individuals' e-payment systems. Others may not be able to adopt the system due to the poor internet infrastructure in their areas.

Ghana's readiness to go cashless

The study's findings suggested that Ghana is generally ready for a cashless system since all the stakeholders attested to this readiness. The stakeholders stated that the available infrastructures are enough for Ghana to transition into a cashless system. While this is true, the stakeholders suggested that there is more room for Ghana to make further improvements and implement policies that will ensure that the system is tailored to the people's needs.

5.3 Recommendations

5.3.1 Recommendations for the Government of Ghana

1. The Government must collaborate with the network service providers and banks to subsidize the charges associated with cashless transactions. By doing this, the financial burden which businesses and customers experience when making cashless payments is lifted. Consequently, more people will adopt the cashless system, and this will foster financial inclusion in Ghana.
2. It is recommended that government maps out and execute a project that will ensure that all the areas with poor electricity, network, and internet infrastructure are provided with the needed assistance. This helps to bridge the digital divide between the less endowed areas and the more advanced areas. Thus, the cashless system will thrive in such areas too.
3. The government must ensure that Information and Communication Technology (ICT) is studied in all basic institutions, especially in the rural areas. With this, ICT studies should be more practical. This helps to increase the number of basic IT literates who are operationally attuned and may at least navigate electronic payment systems.
4. Government must also ensure that there is more awareness and education on the cashless system, its benefits to the economy, and some of the precautions to take while making cashless

transactions. By doing this, individuals will be well-informed to demonstrate vigilance whilst transacting and avoid falling victim to scammers and cyber fraudsters.

5. The government should design an action plan that will create employment avenues for individuals who may lose their jobs due to the implementation of the cashless system.

6. The government must also ensure strict enforcement of the banking laws and cybersecurity frameworks in financial institutions. Thus, institutions or individuals who are found culpable to any of the laws should be brought to justice.

5.3.2 Recommendations for universal banks

1. Universal banks must invest in training cybersecurity experts to ensure that their e-payment systems are shielded from malicious attacks.

2. Universal banks have a role in educating their clients on how they could navigate through the digital platforms for e-banking. They must also educate their clients on some cybersecurity tips like regularly changing their passwords, not sharing their PINS with anyone, and being wary about individuals who portray themselves as officials from the bank. They could use simple explainer videos, which will be translated into various Ghanaian languages.

3. Universal banks must ensure that they constantly upgrade their e-banking systems since it helps to plug any loopholes in the security of the system to keep it safe from attacks.

5.3.3 Recommendations for Future Studies

1. For further studies, it will be essential to research the impact of the cashless system on unemployment in Ghana's banking sector. From the study, it can be inferred that several factors need to be considered before making conclusions on whether the cashless system creates unemployment. Together with this, though the finding from this study was consistent with Chizoba and Anthony (2016) that the cashless system creates unemployment, Mieseigha and

Ogbodo (2013), who expressed a contrary viewpoint, provided valid reasons. Thus, research into this area will provide readers with much clarity and understanding.

2. Further studies could consider carrying out a hypothesis test using the data from this study as a source. This could be done in the form of a Chi-Square test..

3. Also, future studies could adopt Ordinary Least Squares multiple regression models to evaluate the impact of the cashless policy on economic growth in Ghana.

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