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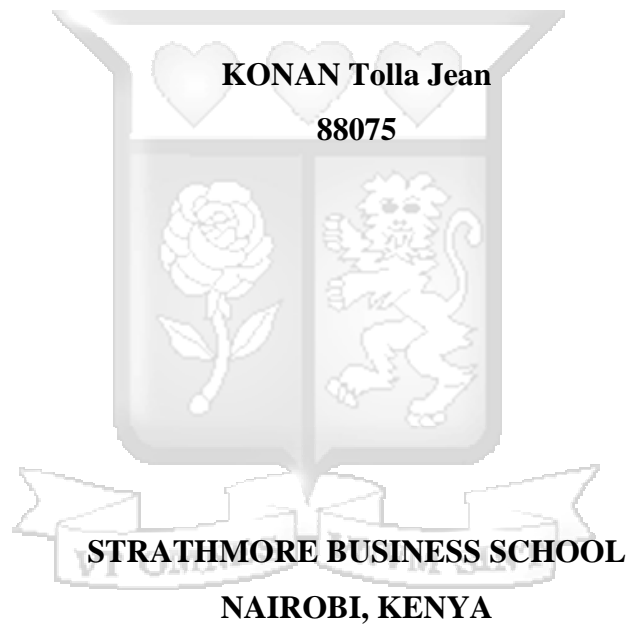
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**DETERMINANTS OF MOBILE BANKING ADOPTION:  
CASE STUDY OF ECOBANK TOGO**

**MASTER OF BUSINESS ADMINISTRATION DEGREE**



**October 2019**

**DETERMINANTS OF MOBILE BANKING ADOPTION:**

**CASE STUDY OF ECOBANK TOGO**

**MASTER OF BUSINESS ADMINISTRATION DEGREE**

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**88075**

**Submitted in partial fulfillment of the requirements for the Degree of  
Master of Business Administration at Strathmore University**



**Strathmore Business School**

**Strathmore University**

**Nairobi, Kenya**

**October 2019**

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Konan Tolla Jean

.....

October 2019



The thesis of Konan Tolla Jean was reviewed and approved\* (for examination) by the following:

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## **ABSTRACT**

The purpose of this study is to identify factors that influence the uptake of Ecobank mobile banking app in Lomé-Togo and rank them according to importance. The study examines five objectives around the uptake of mobile banking application: determine the importance of ease-of-use, determine and rate the importance of perceived relevance/usefulness, determine and rate the importance of perceived risks, determine and rate the importance of customer support, and determine and rate the importance of social trends. It uses quantitative research method. Data is collected through questionnaires, and desk review of secondary data, and presented through descriptive and inferential statistics for analysis. The research focused only on Ecobank in Togo specifically Lomé town. The study mainly used at two theories to explain what influences the adoption of technology innovation in society: The Theory of reasoned action (TRA) and the Technology Acceptance Model (TAM). It is the aim of this study that the insights will be used by Ecobank Togo to boost the uptake of mobile banking and thus increase customer base. A total of 3017 individuals were sampled however, only 1422 responded to the survey. Therefore, the response rate was 47%. This study concludes that the five adoption factors are significant influencers of mobile banking adoption in Togo. The study confirms that the first three independent variables (Ease of use, Perceived risk & Perceived usefulness) explains the dependent variable by over 87%, it means that if Ecobank wants to improve mobile banking adoption, it needs to invest its resources in the order of priority, on ease of use, perceived risk and Perceived usefulness. This will be very useful to bank in identifying the priority areas for intervention to tackle the current uptake hiccups. In addition, this study will help to build the knowledge base on adoption of mobile banking among employees of Ecobank as well as general public.

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## **List of abbreviations**

TAM: Technology acceptance model

TRA: Theory of reasoned action

WAEMU: West African Economic and Monetary Union

BCEAO: Central Bank of West African States

FCFA: Franc currency for African community

SSA: Sub-Saharan Africa



## ACKNOWLEDGMENTS

Before I start, I would like to say thank you to the Almighty God for providing me with the energy, the strength and the means to travel from Dar es Salam, then from Lomé to attend to classes in Nairobi until the completion of this research.

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## DEDICATION

This work is dedicated to my children Louis, Axel, Amaria, Marc-Elie and Abraham and to their lovely mother Leatitia. They really encouraged me to finish this study despite all challenges we went through as a family since I joined Strathmore Business School. Please take this as an inspiring achievement that proves that there is nothing impossible in life.

You can do anything you want. Just dream and act.



## CHAPTER ONE: INTRODUCTION

This study focuses on understanding why bank's mobile applications suffer low uptake in Africa with a closer look into Ecobank Togo. Because of varying reasons (such as cost, ease of use, accessibility, usefulness), African societies do not use and adopt technologies as compared to developed countries. Hence, this makes it imperative for organizations to invest in understanding the factors that would better boost their technology uptake among African societies.

Chapter one of this report provides a background of the study, the construct of mobile banking as well as problem statement, research objectives, research questions, scope, significance and limitations of the study.

### 1.1 Background of the study

Information Technology has proven to be at the center of all human activities (World Economic Forum, 2013). A lot of changes are taking place in the area of information technologies which includes emergence of robotics, Artificial Intelligence (AI), Internet of things (IoT) among others which have now become part of today's daily conversations. At the same time companies are leveraging on Information Technology to address customers' needs and to improve their performances.

During the past couple of years, the penetration of communication technologies has increased significantly in Africa. For example, infrastructure upgrade in fiber optic cables, mobile phone uptake, government policies, internet coverage all of which have enhanced the uptake of new information technologies in Africa.

In Africa, the use of wireless devices such as mobile phones has increased exponentially during the last decade. Consumers are gradually embracing the use of portable wireless devices for various functions including alternative means to access their bank accounts. The African mobile money market has been one of the fastest growing markets (Esther, 2008). For this reason, various types of businesses in the world (Government entities, Multinationals, Small and Medium Enterprises) are taking advantage of mobile technology to serve their customers differently and achieve their cooperate goals more efficiently. For instance, countries are using mobile technology to enhance revenue collection process, to reduce revenue leakages, reduce corruption, reduce diversion of

public funds and bring transparency and accountability in public governance. This is the case of the Tanzanian government whereby tax is remitted online.

Adding into how organizations can use new technologies to improve efficiency, the United Nations e-government survey of 2018 analyzed and reported on the how governments can use e-government and information technology to build resilient and sustainable cities.

On the same note, by adoption of Mobile Technologies by public entities, citizens are able to pay their public duties such as taxes, water and electricity bills by sending money from the comfort of their houses and offices using mobile gadgets.

This study is done in the context where Ecobank Togo has reported very low uptake of its mobile banking application which was launched in 2017 against the expected objectives of 100% adoption rate by 2020.

### **1.1.1 Mobile Banking**

The construct of “mobile banking” has been defined in many ways by different studies. Barnes & Corbitt (2003) defined “mobile banking” as “a channel whereby the customer interacts with a bank via a mobile device, such as a mobile phone or personal digital assistant”. For Pousttchi & Schurig (2004) it is a way of running financial transactions through mobile communication technologies. “Mobile banking” is a subset of electronic banking, “the type of execution of financial services during which - within an electronic procedure - the customer uses mobile communication techniques in conjunction with mobile devices” (Pousttchi & Schurig, 2004). Krugel (2007) describes “mobile banking” as “an extension of the existing payment infrastructure of a bank to mobile phones, as a channel for the leveraging of the mobile network and its reach to deliver banking services to consumers”. It is a more “cost-efficient channel” for banks and allows clients to have instant access to information related to their bank accounts.

In this study, the construct of “mobile banking” is defined from the point of view of the number of mobile downloads and active users. To measure this construct, an assessment on the number of people who have downloaded the Ecobank mobile application and using it on daily basis, against the target number of active users by 2020.

Mobile banking is causing a boom in the sector of financial services in Togo as well as many other countries in Africa. In fact, “mobile banking” is replacing the traditional on-the-counter banking and now many top banks are up and running with their own mobile solutions, trying to leverage on technology that comes with mobile phones to improve efficiency of service delivery (Feig, 2007). Like any other International class banks, Ecobank Group embarked in a Digital Transformation since several years. This is to align its strategy with the global trend and respond adequately to consumers’ demands. Those changes in customers’ habits have pushed banks to adjust their strategy and to give more focus to digital banking and Mobile banking. However, there is no universal form of “mobile banking”; rather, goals and structures vary from market to market. The systems offer a variety of financial functions, including “micro payments to merchants”, “bill-payments to utilities”, “money transfers between individuals”, and “remittances”. Currently, different models (institutional and business) deliver these systems. Some are offered entirely by banks, others entirely by telecommunications providers, and still others involve a corporation between a bank and a telecommunications provider (Porteous, 2006). Regardless of the apparent benefits of mobile banking, a lot of factors that influence adoption of new technologies. These factors can be put into three categories: Social factors (Attitude towards change, trust, convenience and comfort in using the services), Economic factors (Access to mobile phones, cost of the service, marketing strategies and availability of alternatives), Technological factors (Availability and reliability of the service, security and confidentiality concerns, ease of use, network and internet coverage, handset interoperability).

People do not use any type of “mobile banking service” because of the perception of “cost”, “risk”, “low perceived relative advantage” and “complexity” (Muñoz and Laukkanen, 2010).

### **1.1.2 Mobile Banking in Togo**

Mobile banking in Togo is an emerging sector. Even though there has been many obstacles that limit development of new mobile technologies in the country, the sector is now benefiting from a favorable national context which could accelerate uptake of mobile banking and mobile technologies in general. Togo has made a leap forward in the

ICT sectors which includes: increased penetration of mobile phones, strong fixed internet market, stable mobile internet and favorable legislations on exchange of information and electronic transactions. In addition, the country has an internet exchange point.

Even if mobile banking has come a long way in ensuring its survival, it has experienced competition over the years from new entrants into the financial markets In Togo, Mobile Network Operations such as Moov and Togocel are playing in the financial service field with their respective Mobile Money services, and alternative options such as mobile money. The rapid growth of mobile banking in Africa has seen many commercial banks buy into this technology. Some of the services being offered include transfer of funds from bank account to mobile money account, airtime top-up, change of mobile banking PIN, banking services like account inquiry which includes balance inquiry and mini statement inquiry, funds transfer between accounts both own and other people's accounts, cheque book request, emergency loans, bill payment and viewing linked accounts, just but to mention a few (Esther, 2008).

According to a research conducted by the European Investment Bank (2014), the population holding mobile bank account in Sub-Saharan Africa is 11%. However, some individual countries have thrived more than others in mobile banking with telecommunication companies dominating the mobile money transfer sector. Even though there is little documentation facts and figures of mobile banking in Togo, the fact that Ecobank mobile application was the first ever in Togo (launched in 2017) is an indicator of relatively new market in mobile banking.

As of today, out of the ten (10) commercial Banks, only Ecobank Togo has launched a Mobile Banking service. Our study will therefore be focused on Ecobank Togo only. The choice of Ecobank Togo is also justified by the fact that the researcher is an employee of the bank and would like to formulate recommendations to his company based on the results of this study to improve the update of its Mobile Banking platform named Ecobank mobile.

The choice of Ecobank Togo by the researcher it also justified by his employment by this bank. Access to secondary data would be facilitated and for primary data, purposive sampling will be done.

### 1.1.3 Ecobank Togo

Ecobank Togo was the first affiliate branch opened in 1988 by Ecobank Transnational Incorporated (ETI). More details on Ecobank's presence will be found into the appendix 4.

During the last quarter of 2016, Ecobank launched its Mobile application called "Ecobank Mobile" available for android and IOS smartphones. The application is also available for non-smartphones via USSD technology.

The Ecobank mobile Banking application has a mobile wallet functionality that allows the unbanked to join the financial system quasi-instantly. One of the strategic objective of the bank is the reach 100 million customers by 2020. The current number of client of the bank is 14 million across the 33 countries.

Since the launch of the app two years ago, it had reached 450,000 downloads in Togo by November 2018 while the total number of downloads of the app across the 33 countries is 8,5 million.

The bank estimates that the mobile banking platform will allow it to achieve more deposits especially the Non-Interest Bearing (NIB) deposits. This will give room to the bank to offer cheaper loans and facilities to its customers.

To achieve the above business objectives, the Mobile Banking application of Ecobank should have attractive contents and added value services that will attract more corporate and individual clients.

It was realized that after two years of operations, the speed and acceptance level of the Ecobank Mobile system in Togo is still far below expectancy. Therefore, this paper intends to study the level of adoption of the Ecobank Mobile application in Togo by analyzing the key adoption determinants.

Ecobank Togo has 634,000 number of clients (Ecobank, 2019). Ecobank Togo management had set a target of 3 million users by 2020.

Internal data shows that on 5,330 clients are actively using the Mobile application in Togo. This indicates less than 1% uptake rate two years after the launch of the mobile application.

Given that the researcher is an employee of Ecobank Togo, the choice of this topic couldn't have come at a better time.

## **1.2 Problem statement**

Since the launch of Ecobank Mobile banking app in November 2016, only a handful of clients have adopted it and used it actively up to date. As at December 2018, the app had 8 736 989 individual users and 105,000 corporate users. This rate of adoption is considerably low given that the bank's target is 100 million customers for the entire Group and 3 million in Togo by 2020. This low adoption of Ecobank mobile app is a call for intervention given that the app does not only intend to provide financial services to those without access to "traditional banking" but also to the banked population. Therefore, the current rate of adoption indicates that only less than 11% of existing Ecobank clients are using the app. In addition to the low number of app downloads (2,6 million downloads by December 2018), the percentage of active app users is 7%, which raises questions why such a huge proportion would download the app and leave it dormant in their mobile phones. Even though a few researches on mobile banking have been conducted in some African countries, it would be risky to adopt their findings because the contexts in which they were studied could considerably vary from the reality of Ecobank in Togo.

Regardless of the above observations, there has not been any scholarly research conducted within Ecobank Togo to explore the root causes of the low app uptake. Not much is known on the "social", "economic", and "cultural" contexts surrounding the use of the mobile app in Togo. As mentioned by Maurer (2008), scholarly research on the adoption and socioeconomic contexts of "mobile banking" systems in developing world is rare because the systems are new. Therefore, for Ecobank Togo to plan their marketing strategies, there is need to study the personal characteristics of mobile banking users and identify the important determinants that influence their adoption decisions.

The factors that influence the uptake of Mobile Banking among its users have been studied in different countries therefore; the problem of low adoption is not unique to Togo or to Ecobank Togo alone

Recently, different scholars have tried to explore factors behind the level of adoption of the Mobile Banking from a general point, Industry or sociological angle analysis with

inconclusive results that can assist companies or banks answering to their specific question related to Mobile Banking uptake. Achieng, B. M., & Ingari, B. K. (2015) and Kim, J. (2017). Hence the research gap we intend to close by this current study.

Luarn and Lin (2012) note that despite the fact that numerous mobile banking adoption studies have been investigated, regrettably, most studies were conducted in countries such as Korea, Singapore, Brazil, Taiwan and China with relatively little attention paid to developing countries such as Togo. Available studies were all undertaken in developed countries or emergent economies which had much more advanced technology than Togo.

Over and above calling for attention to the gap in scholarly research focusing on the contexts in which Ecobank mobile app is used in Togo, this study seeks to collect feedback on the relevance, ease of use, social trends, perceived risk, and customer support from people who have interacted with the app in one way or the other.

### **1.3 Purpose of the study**

The goal of this study is to identify factors that influence the uptake of Ecobank “mobile banking” in Togo and rank them according to importance.

### **1.4 Research Objectives**

The overall purpose of this study will be pursued through the following research objectives:

1. To identify and describe the factors that influence adoption of “mobile banking”.
2. To assess the effect of “ease-of-use” on the uptake of “mobile Banking” application
3. To assess the effect of “Perceived usefulness” on the uptake of “mobile Banking” application

4. To assess the effect of “perceived risk” on the uptake of “mobile Banking” application
5. To assess the effect of “social trends” on the uptake of “mobile Banking” application
6. To assess the effect of “customer support” on the uptake of “mobile Banking” application
7. Identify the top-most influential factors of “mobile banking” adoption

### **1.5 Research Questions**

To achieve the objectives cited above, this research will go through the following research questions:

1. What are the factors that influence adoption of “mobile banking”?
2. How does ease-of-use affect uptake of “mobile banking” applications?
3. How does perceived relevance/usefulness of mobile banking affect adoption of mobile banking applications?
4. To what extent does perceived risk of “mobile banking” prohibit uptake of mobile banking applications?
5. How important are social trends in influencing uptake of “mobile banking” applications?
6. How important is customer support in influencing uptake of “mobile banking” applications?
7. Which are the top-most influential factors of “mobile banking” adoption?

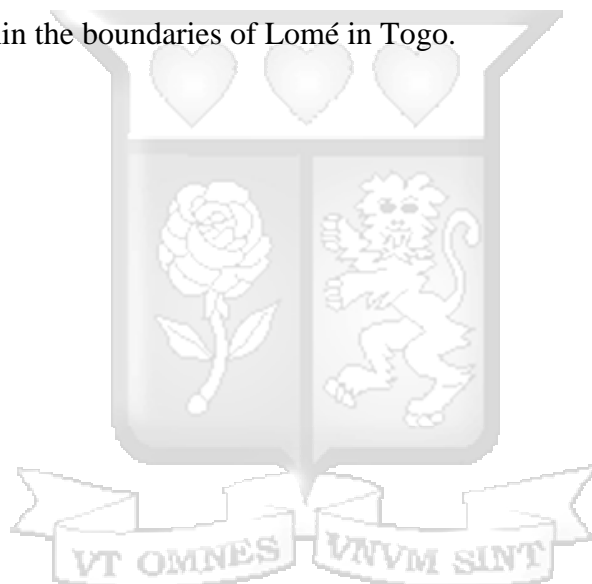
### **1.6 Significance of the study**

The outcomes of this paper will be useful in several ways. It will provide insights that could be used by Ecobank Togo to boost the uptake of mobile banking and thus increase customer base. This research will study and rank various determinants according to their level of influence on mobile banking uptake. This insight will be very useful to Ecobank in identifying the priority areas for intervention to tackle the current uptake hiccups. In addition, this paper will help build the knowledge base on adoption of “mobile banking” among employees of Ecobank as well as the general public.

In general, the outcomes of this study will inform economic planners such as policy makers, researchers and practitioners in the private and public sectors to understand the factors that affect “mobile banking” among the Togolese population. This will help them in making policies that are better informed by realities on the ground.

### **1.7 Scope of the study**

This study will include desktop research, primary and secondary data collection. Secondary data will be sourced from the relevant departments within Ecobank Togo to the extent allowed for public disclosure. Primary data will be collected through online questionnaires for the majority and face to face interviews for some of them with respondents within the boundaries of Lomé in Togo.



## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Theoretical framework**

Chapter two of this report is built on secondary research about the factors that influence the uptake of “mobile banking” in general, and some references of case studies as experienced in other parts of the world (empirical literature). Therefore, this section is broken down into various sub-sections which cut across; the theory of technology adoption, factors affecting mobile banking adoption (“ease-of-use”, “perceived relevance”, “perceived risk”, “social influence” and “bank’s customer support”), challenges of mobile banking in Togo, and the conceptual framework.

#### **2.1.1 Diffusion of innovation theory**

Diffusion of innovations is a theory profound by Everett Rogers in the year 1962 and it seeks to explain how, why, and at what rate new ideas and technology spread. Rogers argues that diffusion is the process by which an innovation is communicated over time among the participants in a social system. For Rogers (2003), adoption is a decision of “full use of an innovation as the best course of action available” and rejection is a decision “not to adopt an innovation”. Rogers defines diffusion as “the process in which an innovation is communicated thorough certain channels over time among the members of a social system” . As expressed in this definition, innovation, communication channels, time, and social system are the four key components of the diffusion of innovations

The diffusion of innovation theory is one of the most popular theories that explain the factors that influence an individual to accept or reject an innovation or a new technology. This theory attempts to explain why, how and at what speed a new idea or innovation can spread in each given population. It goes further to explore best practices to increase acceptance and uptake of new products to a market.

Rogers (1995) defines “diffusion” as “the acceptance of an innovation over time by a given social system”. Consequently, “diffusion processes” result in “the acceptance or

penetration of a new idea, behavior, or physical innovation". Rogers identified several attributes of an innovation that are key influencers on the acceptance behavior which are; relative advantage, complexity, compatibility, trialability, and observability. Several empirical studies have examined these factors in adoption and distribution of Internet-based technologies and have consistently concluded that these factors, particularly those of relative advantage, ease of use, and compatibility, as the most regularly striking factors for uptake of Internet and mobile technologies (Koenig-Lewis et al., 2010)

Rogers (1995) outlined several approaches to help an innovation reach a self-sustaining level, including when an innovation adopted by a highly respected individual within a social network and creating an instinctive desire for a specific innovation. Another tactic includes inoculating an innovation into a group of individuals who would eagerly use the said technology, as well as providing positive responses and benefits for early adopters. This concept is important to our research because our construct which is “mobile banking”, is considered as a new technology particularly in Sub-Saharan markets like Togo. Therefore, studying this theory will help to explain the rate at which mobile banking can spread and sustain itself in a given population. In fact, most of the independent variables in our study were borrowed from those studied by Rogers (1995) in the theory of innovation.

### **2.1.2 Technology Acceptance Model (TAM)**

In studying user acceptance and use of technology, the TAM is one of the most quoted models. Technology Acceptance Model (TAM) was developed by Venkatesh and Davis (1989) to explain computer-usage behavior.

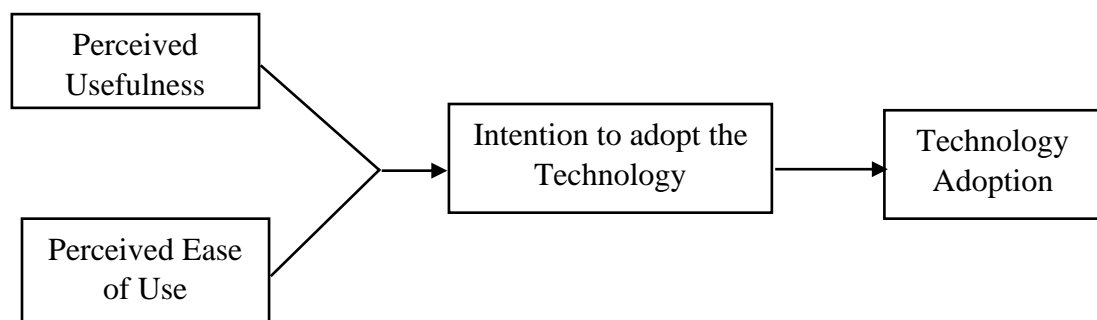
The technology acceptance model (TAM) is an information systems theory that models how users come to accept and use a technology.

The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it, notably: Perceived usefulness (PU) – This was defined by Fred Davis as "the degree to which a person believes that using a particular system would enhance his or her job performance". It means whether or not someone perceives that technology to be useful for what they want

to do. And Perceived ease-of-use – Is defined as "the degree to which a person believes that using a particular system would be free from effort" (Davis 1989). If the technology is easy to use, then the barriers conquered. If it's not easy to use and the interface is complicated, no one has a positive attitude towards it. TAM provides a basis of tracking the impact of variables on beliefs, attitudes and intentions. Two main elements, attitude towards a behavior and subjective norm, are identified as determinants of behavior. An attitude towards a behavior is "an individual's positive or negative feelings about performing the target behavior". This model concludes that "perceived ease of use" and "perceived usefulness" are the two most important aspects that create an attitude (positive or negative) within an individual. If any of these two factors creates a negative attitude within an individual, then that individual ends up with no intention to "adopt the technology" in question. In the contrast, when "perceived usefulness" or "ease of use" create a positive attitude, the individual develops intention to adopt a technology.

Venkatesh and Davis (2000) defined "perceived usefulness" as "the degree to which a person believes that using a particular Information system would improve his or her job performance", and "perceived ease of use" as "the degree to which a person believes that using a particular information system would be free of effort".

Figure 1 below is a representation of the elements in the TAM:



**Figure 1: Technology acceptance model**

Source *Venkatesh and Davis (1989)*

Ching et al. (2011) studied the factors influencing the uptake of “mobile banking” in Malaysia using the Technology Acceptance Model (TAM). The objective of this paper was to examine the relationships between theories of “perceived usefulness” and “perceived ease of use”, “social norms”, “perceived risks”, “perceived innovativeness”, and “perceived relative advantages” towards behavioral intention in the uptake of “mobile banking”. The findings of this study revealed that “perceived usefulness”, “perceived ease of use”, “relative advantage” and “perceived risks” were the factors influencing the behavioral intention of mobile users to adopt “mobile banking services” in Malaysia. This model identifies “perceived ease of use” and “perceived usefulness” as the two most important variables in predicting human behavior towards adopting or rejecting, consuming or disusing a new technology, especially computed based technologies. Our research is seeking to proof whether the same concept applies to mobile based technologies.

### **2.1.3 Unified theory of acceptance and use of technology (UTAUT)**

After the launch of the Ecobank’s mobile banking application, there has been a continuing pursuit to ensure its acceptance to the users. This has become an ongoing management challenge which determine which model if well implement, would lead to higher acceptance of the application. To answer this management question, our research sought to explore the Unified Theory of Acceptance and Use of Technology (UTAUT). This theory resulted from the harmonization of various literatures associated with acceptance of new technologies, and alternative views on user and innovation acceptance (Willians D. et al., 2015) The theory was developed through the review and integration of eight dominant theories and models, namely: the “Theory of Reasoned Action (TRA)”, the “Technology Acceptance Model (TAM)”, the “Motivational Model”, the “Theory of Planned Behaviour (TPB)”, a combined “TBP/TAM”, the “Model of PC Utilization”, the “Innovation Diffusion Theory (IDT)”, and the “Social Cognitive Theory (SCT)”.

These contributing theories and models have all been broadly and successfully utilized by a large number of previous studies of technology or innovation adoption and

diffusion within a range of disciplines including information systems, marketing, social psychology, and management

The UTAUT suggests that four main constructs (effort expectancy, performance expectancy, social influence and facilitating conditions) determine directly the behavioral intention and ultimately the behavior of an individual towards accepting or rejecting the use of a technology. Those are in turn influenced by gender, age, experience, and voluntariness of use (Venkatesh et al., 2000). It is alleged that by assessing the presence of each of these concept in a real-life environment (like Togo), the researcher will be able to examine the individuals' intention to use a specific system (in this case the Ecobank mobile banking app), thus allowing for the identification of the key influences on the adoption.

## **2.2 Empirical review**

### **2.2.1 Mobile banking**

Mobile technology is transforming the banking and payment business. It offers new horizons for banks to provide added convenience to their existing clients and reach a larger population of unbanked customers, especially in developing markets. However, banks face significant challenges as new players enter these markets and modify the ecosystem of the industry Vijay Govindarajan ( 2012).

Diffusion rate of internet and mobile phones in Africa has modified the way people quest for information and shop for products and services. Thus, has transformed many industries ranging from travel to advertising, music and retail. Mobile technology is now poised to have an even more far-reaching impact on the banking and payment industry across Africa. In Kenya for example, more than half of all personal money transactions are done via phone transfers (Juseuk, 2017). Although no single model can be transferred from one market to another due to significant market specific differences in regulatory policies, infrastructure customer needs, income levels and mobile usage, banks and financial service providers need to examine their own market in detail.

Given the speed of this transformation, banks are spending money and time in mobile technology by developing mobile apps, sensitizing and educating users. According to a

study by Vijay Govindarajan (2012), this has led to increased adoption of “mobile banking” among consumers much faster compared to online banking more than a decade ago.

In Sub-Saharan Africa, mobile money and mobile banking technologies receive great support from governments because they are considered as a means to achieve financial inclusion, especially among rural and unbanked populations. This has seen great success in adoption of innovative services such as M-PESA in Kenya, MTN in Uganda, and Vodacom in Tanzania. These successes have prompted new players to launch similar services in many emerging markets. However, out of the more than 130 such services, only a small number have been successful. A study by the World Economic Forum shows that only four countries – Kenya, Tanzania, Ghana, and Philippines – have achieved more than 10% adoption of mobile financial services among its population Vijay Govindarajan (2012). Thus, our research objectives are relevant because they seek to highlight the acceptance factors that are explicit to mobile banking in Togo.

#### **2.2.1.1 Services available in a mobile banking system**

“Mobile banking” is a financial service delivered via a mobile network using mobile devices. “Mobile banking” includes m-payments that involve access to banking services by use of mobile device. Such services include account-based savings or basic transactional products offered by financial institutions at reduced costs. The channel allows implementation of new relationships with the financial sector by new entrants and subsequent distribution of services thereby it uses existing mobile communications infrastructure with existing wide reach to unbanked populations. M-banking system allows users to store currency in an account accessible via the mobile phone provided there exists a bank account that can be associated (Sujan, 2009). M-Banking is also seen as efficient in terms of entry costs for instance the absence of charges at the time of registration. M-Banking customers view enrolling into a banking facility as a necessary convenience and therefore attach high consideration to any costs. The absence of registration costs could boost the preference for the service.

### **2.2.2.3 Adoption of mobile banking in Togo**

According to the West African Economic and Monetary Union (WAEMU, 2015) Togo is lagging in the adoption of mobile money. The country's share in the WAEMU is less than one percent of account opening, volume, and level of transactions. To comprehend this delay, it is important to identify and study some factors that have been proven to affect the acceptance of "mobile money" services in Togo. The banking rate in Togo is less than 15 % (Ashta et al., 2016) while in 2014, about 67% of the population (4.66 million out of nearly 7 million) subscribed to mobile telephony. It is therefore judicious to take the guess that "mobile money" should make a significant contribution in increasing the rate of access of individuals to financial services. In fact, by the end of 2014, while the mobile money recorded 18.3 million account openings and 259.3 million transactions valued at about 3,760 billion FCFA in the WAEMU zone, Togo's share was lower than one percent of account opening, volume, and aggregate value of transactions (BCEAO, 2014). It is factual that Togo lags far behind in the adoption of mobile money in the WAEMU zone. To understand this relative poor performance of Togo, one needs to pinpoint the key factors that determine the adoption of "mobile banking". Which is the aim of this study.

### **2.2.1.4 Challenges of mobile banking in Sub-Saharan Africa**

According to International Journal of Business and Commerce (2014) report, Nigeria has overtaken South Africa to become the continent's largest mobile market with close to 100 million subscribers with market infiltration at only 60% in early 2012. Thulani, et al., (2009) highlighted that most of the populations in Africa have no access to banking services, with only 20% of African families having bank accounts. For instance, in 2007, only about 30% of houses in Kenya had bank accounts; and in Benin, with residents of 7 million, had only 35 bank branches in 2007. Abor (2005) also stated that the limited access to financial services in Africa stems particularly from deficient infrastructures, physical-geographical isolation or inaccessibility, financial illiteracy, all of which culminate into extremely high cost of providing banking services. Ethiopia, Uganda and Tanzania for instance, each have less than one bank branch per every 100,000 individuals compared to 10,000 in Spain. This ratio however shows a high disparity across the

continent, with Namibia having more than four, Zimbabwe more than three and Botswana nearly four bank branches per 100,000 people. Sub-Saharan Africa (SSA) has the lowest deposit institution penetration in the world standing at an average of 16.6% compared to 63.5% in developing nations (Atemnkeng and Nzongang 2006).

### **2.2.2 Factors that affect uptake of mobile banking**

New technologies and innovations are believed to present risk for many clients, hence they react differently based on their innate characteristics, the wants and the needs of their companies and the behavior of other buyers. Adoption of innovation therefore depends on, “ease of use”, “perceived risk”, “perceived relevance”, “social influence” and “customer support”.

#### **2.2.2.1 Ease of use**



To understand the definition of “ease-of-use”, it is important to start by defining its antonym which is complexity. Complexity can be explained as the degree to which an innovation can be considered relatively difficult to understand and use. If an innovation is not complex, then it can be said to be easy to understand and use. Complexity negatively influences the uptake of any innovation such as mobile phone banking. “Ease of use” refers to the extent to which mobile banking is perceived as easy to comprehend and operate. Various past researches recommend that there is a strong impact of “perceived ease of use” of new technology on its acceptance (Luarn and Lin, 2005). When mobile banking services have very user-friendly interfaces, users see them as “easy to use”, and hence form positive attitudes towards them (Lin, 2011). Complexity in use is a major factor in the uptake of mobile banking. There is considerable amount of empirical research on the mobile technology to suggest that users’ intention to adopt mobile banking is inhibited by the perceived complexity of the innovation (Au & Kauffman, 2008). Much of the available literature on barriers of mobile banking uptake is predominantly related to technical complexity. Complexity in use, technical infrastructure, and design of technology are reported as individual barriers in many studies (Vrechoupoulos et al., 2003).

#### **2.2.2.2 Perceived risk**

Perceived risk is defined as the degree of uncertainty on the outcome of the use of innovation (Gerrard and Cunningham, 2003) or the level of uncertainty on the security of the use of innovation (Cruz et al., 2010). Consumers are reluctant to adopt the mobile banking services if there is uncertainty (Baek and King, 2011). The increasing level of uncertainty will rise the level of perceived risk towards the mobile banking services. Mitchell (1999) explained that risk is an expectation of loss, and the perceived risk will be higher when expectation of loss is greater. Prior studies show that perceived risk has negative effect on the attitude and adoption of technology-enabled services. Arvidsson (2014), Cruz et al. (2010) and Riquelme and Rios (2010) found that perceived risk is a critical barrier that would discourage people from accepting mobile banking services.

#### **2.2.2.3 Perceived relevance**

Perceived Relevance refers to the value that clients perceive they are to receive in exchange for the price that they pay to avail any product or service. It may be explained as a trade-off between what clients are receiving (in the form of quality, benefits and utilities) and what they are sacrificing for it (mainly in the form of price) (Zeithaml, 1988; Keeney, 1999). This concept is another important factor that has had a substantial influence on adoption intentions for internet-related technologies, including mobile commerce, mobile banking, mobile wallets and the likes (Pagani, 2004).

#### **2.2.2.4 Social trends and social influence**

The concern here is the user's awareness of what others will think of them when they use the technology. Is the use of the system linked with a positive image? Social Influence refers to the extent to which consumers' decisions to use a product or a service are affected by the sentiments of their families, relatives or friends (Riquelme and Rios, 2010). Social influence may also be defined as "the extent to which consumers perceive that important others (Family and friends) believe they should use a particular technology" (Venkatesh et al., 2000). This theory has been widely accepted by earlier researchers as a key factor while determining the adoption intentions of technologies

similar to the mobile wallet. In mobile banking, social influence can be defined as being the degree to which a user perceives the importance of others in the decision to adopt an innovation. Researches investigating the factors that predict mobile service acceptance have constantly shown that social influence plays an important role (López-Nicolás et al., 2008). Kleijnen et al. (2004) studied the adoption of wireless finance, finding that social influence was significant in predicting intention.

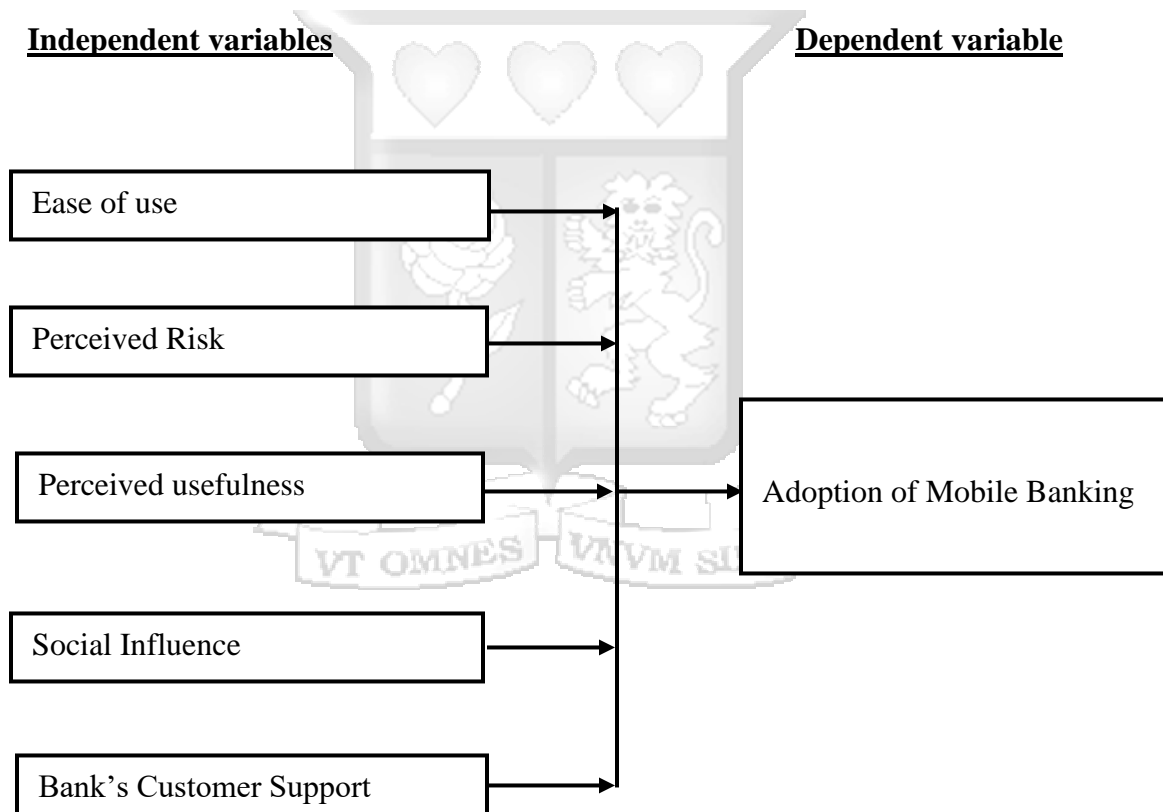
#### **2.2.2.5 Bank's customer support**

Marketing and customer support effort on the part of the bank is an important driver for adoption of internet banking. Sathye (1999) found that one of the main reasons for non-adoption of internet banking in Australia was lack of awareness. Consequently, it was felt that the banks' initiative like promotion of internet banking by media campaigns will go a long way in eradicating doubts and reassuring customers to use this channel of banking. (Akinci et al, 2004), found that non-users of internet banking were not mindful of all the benefits of internet banking and believed that it is not thinkable to do several categories of transactions using the internet and therefore preferred going to the bank branches notwithstanding internet access availability. (Williams et al, 2015), recommended that lack of awareness of internet banking and its benefits can be tackled by better marketing, informing consumers about the features, benefits, advantages, convenience and continued customer support. They suggested that marketing campaigns, attractive dedicated user manuals, and awareness sessions might prove valuable for creating awareness. These finding suggest that banks' initiative in creating awareness about the different possible transactions using the app, updating their website with latest information and making their apps user friendly would go a long way in generating mobile banking channel acceptability.

### 2.3 Conceptual framework.

This study borrowed largely from the concepts from “the Diffusion of Innovation Theory” by Everest Rodgers and “the Technology Adoption Model”. According to these concepts, Adoption of a technology depends on various factors which have been categorized into five independent variables.

The dependent variable in this study is “Adoption of Mobile Banking Application” while the independent are the Factors Influencing mobile banking uptake which are; “ease of use”, “perceived risk”, “perceived usefulness”, “social influence”, and “customer support”. The connection between the variables can be illustrated as follows:



**Figure 2 : Factors influencing adoption of mobile banking in Togo**

Source: Author, 2019

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

In this chapter describes the research design, research population, population sample, validity and reliability of instruments, data collection and the data analysis.

### **3.2 Research Design**

This study seeks to determine and examine the key determinants of “mobile banking” adoption with a closer look into the Ecobank’s mobile banking application in Togo. This study will be cross-sectional. Raw data will be collected at one point in time using structured questionnaires through face to face interviews and online means. The study used both descriptive and inferential statistics. Descriptive research will attempt to describe the frequencies, percentages, mean, and crosstabulation between variables. The study used inferential statistics for sake of enabling it to make inferences about the relationship between Independent variables and Dependent variable. This whole design will allow for triangulation of data collection and analysis. The nature of data collected is friendly to all the intended analysis in this research and shall enable attainment of the envisaged outcomes.

### **3.3 Research Population and sampling**

The researcher performed the study on all Ecobank Togo Individuals that have already downloaded Ecobank Mobile application. This was the researcher’s sampling frame. Its size is: 451,062 cases. Our sampling frame is our study population. The researcher adopted Probability sampling Technique to sample the cases to interview. The level of confidence is 95 per cent with margin of error of 3 per cent.

Given that for more academic studies involving individuals, response rate of 50 per cent and 35 to 40 per cent are practical (Baruch and Holtom 2008), the researcher have applied the following formula to calculate the sample size:

$$na = \frac{n \times 100}{re\%}$$

Where :

- **na** = Actual sample size
- **n** = Minimum sample size base on the total population at 95 per cent of confidence level and 3 per cent of margin of error. Refer to Appendix 5.

The researcher used 100,000 as minimum population and 1,056 as minimum sample size at 3 per cent of margin error.

- **re%** = estimated response rate. The researcher will expect 35% response rate.

$$na = \frac{n \times 100}{re\%} = \frac{1056 \times 100}{35} = \frac{105600}{35} = \frac{n \times 100}{re\%} = 3017$$

The Sample size of this study was estimated to be **3,017** individuals from Togo that have already onboarded on the mobile Banking Application. The questionnaire was therefore sent to 3017 respondents who were randomly selected from Ecobank's mobile banking clients data base.

Interviews conducted via online questionnaire sent through email or via phone call. Contacts and location details of respondents was obtained from Ecobank Togo database. Sampling was random and was a mix of all the customer segments. Gender mix was aligned with the existing gender proportion within the cases.

### 3.5 Data collection

The study used semi-structured questionnaire that contains both open ended and closed questions. The questionnaire was self-administered, but in the case of phone interviews or face to face interview, the researcher captured the responses. For the two data collection methods, the investigator did a piloting phase to test effectiveness of the

questionnaire. After the pilot, the researcher adjusted the questionnaire to improve its efficiency.

### 3.6 Data Analysis

SPSS will be the key software for data analysis. The researcher will use both Descriptive and Inferential statistics. In Descriptive statistics, the researcher will focus on the general factors of the study population, such as demographics, industry which will be summarized using means, frequencies and percentages. etc. Also, the researcher will analyze the data using Descriptive Statistics to show trends that will be summarized in bar graphs and pie charts generated through multivariate analysis.

Since descriptive study may not answer some of the research questions, inferential statistics will also be deployed. The inferential statistics used will be Spearman rank order Correlation. This is a factor analysis to establish determinants of successful mobile banking adoption. In other words, the researcher will carry out factor analysis to determine the correlation between the independent variables and the dependent variable. The aim is to put our finger on the factor that has the highest explanatory power on adoption of mobile banking technology. The study also will carry out a regression analysis to draw up the conclusions of the findings.

The multiple regressions analysis used in this model is:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5$$

**Where:** Y= Mobile banking adoption

$\alpha$ =Constant term,

$\beta$ = Beta coefficients,  $X_1$  = Ease of use,  $X_2$  = Perceived usefulness,  $X_3$ = Perceived risk,  $X_4$ = Social influence, and  $X_5$ = Bank customer support.

Multiple regression analysis was used to determine the two or three most important factors that influence adoption. This will help Ecobank team to prioritize which factors to focus more on depending on their impact on adoption.

The researcher used Multicollinearity test, testing for superior correlation. This test will also remove biasness if any hence producing quality, reliability and validity of this study.

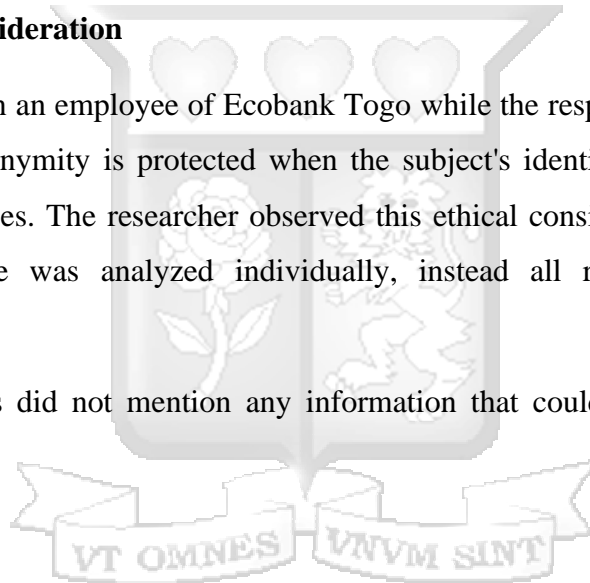
### **3.7 Instrument Validity and reliability**

The researcher conducted a mini-survey to test the survey time and comprehensibility of the questions by the respondents. This exercise was conducted face to face with 10 sampled respondents to examine their understanding of the question's typologies. All the respondents demonstrated satisfactory levels of comprehension of questions which proved the questionnaire reliable.

### **3.8 Ethical consideration**

The researcher is an employee of Ecobank Togo while the respondents are clients of the same bank. Anonymity is protected when the subject's identity cannot be linked with personal responses. The researcher observed this ethical consideration by ensuring that no questionnaire was analyzed individually, instead all responses were analyzed together.

Also, the clients did not mention any information that could assist the researcher to identify them.



### 3.9 Operationalization of variables

**Table 1: Operationalization of the study Variables**

Variable		Indicator	Measure of indicator	Question number
		<b>Dependent</b>		
Mobile banking adoption		Level of adoption	Using 5- Point Likert Type Scale	10
		<b>Independent</b>		
Ease of use		Extent of application in mobile banking practices	Using 5- Point Likert Type Scale	11
Perceived risk		Extent of application in mobile banking practices	Using 5- Point Likert Type Scale	12
Perceived usefulness		Extent of application in mobile banking practices	Using 5- Point Likert Type Scale	13
Social influence		Extent of application in mobile banking practices	Using 5- Point Likert Type Scale	14
Customer support		Extent of application in mobile banking practices	Using 5- Point Likert Type Scale	15

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF RESULTS

This chapter gives the results of the analyzed data as collected from the field. The goal of the study is to analyse the factors that influence adoption of mobile banking technology in Togo. The research capitalized on tables and figures to present the findings.

#### 4.1 Response rate

A total of 3017 individuals were sampled however, only 1422 responded to the survey. Therefore, the response rate was 47%.

#### 4.2 Socio-economic characteristics of respondents

Majority of the respondents were male (53%). Youthful respondents between the age of 21-30 were the most predominant (50%) followed by the age group below 20 years which constituted 32% of the respondents. Respondents above 50 years were the minority with only 3% representation. Regarding marital status of respondents, 74% were single while 16% were married, the rest were either widowed or separated.

**Table 2 : Social characteristics of respondents**

<b>Social characteristics of respondents</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Gender</b>		
Female	662	46.6
Male	760	53.4
<b>Age</b>		
Below 20	459	32.3
Between 21 and 30	639	44.9
Between 31 and 40	195	13.7
Between 41 and 50	67	4.7
Above 50	49	3.4
<b>Marital status</b>		
Married	232	16.3
Separated	53	3.7
Single	1047	73.6

#### 4.2.1 Economic characteristics of respondents

Majority of the respondents held an undergraduate degree (64%) while 12% and 10% of respondents had postgraduate degree and diploma respectively. 53% of the respondents were unemployed while 22% were employed and 21% were self-employed or had their own businesses. Regarding the monthly income of respondents, 38% earn less than \$300 per month, 16% earn less than \$500 per month while the rest earn less than \$800 per month.

**Table 3 : Economic characteristics of respondents**

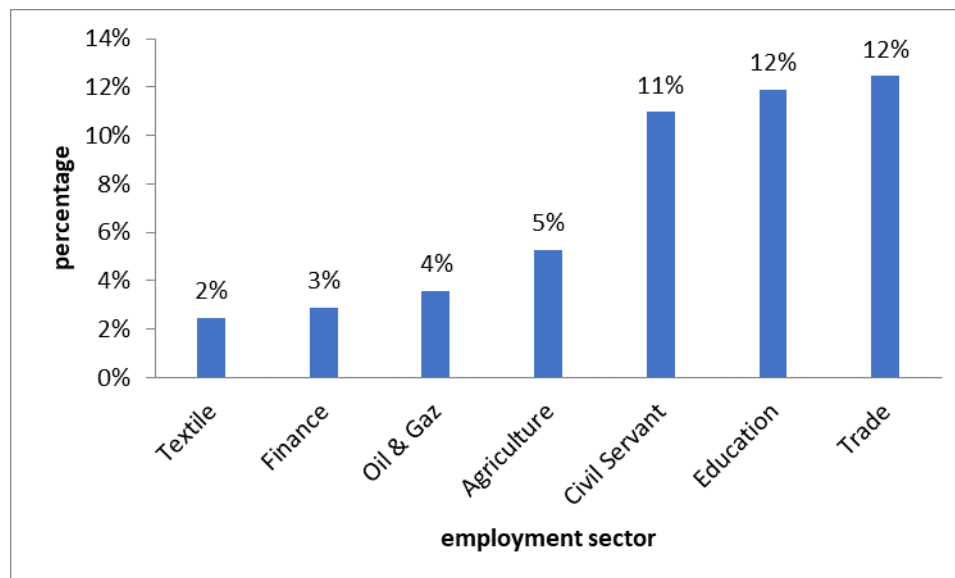
<b>Economic characteristics of respondents</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Highest level of education</b>		
Diploma/Certificate	142	10.0
High school	94	6.6
None	9	.6
Postgraduate	174	12.2
Primary school	7	.5
Undergraduate	907	63.8
<b>Employment status</b>		
Employed	316	22.2
Self-employed	292	20.5
Unemployed	749	52.7
<b>Level of monthly income</b>		
Below \$300	533	37.5
Between \$1501-\$2500	25	1.8
Between \$300-\$500	220	15.5
Between \$501-\$800	72	5.1
Between \$801-\$1500	16	1.1
Over \$2501	15	1.1

#### 4.2.2 Sector of employment

Most of the respondents were working in the trade and education sectors (12%), followed closely by civil servants (11%), agriculture (5%), oil and gas (4%), finance and

textile (3%) each, textile and IT (2% each). Other sectors where respondents work were represented by percentages less than 1%.

**Figure 3 : Respondents' sector of employment**



#### 4.2.3 Respondents' interaction with Ecobank Togo

39% of the respondents opened their first account with Ecobank within the last five years, 14% between 5-10 years ago, 11% between 10-20 years ago and 11% opened their account over 20 years ago. 54% of the respondents said that they have used a digital banking to transact while 38% said they have never used any form of digital banking to transact.

**Table 4: Interaction with Ecobank**

<b>Respondents' interaction with Ecobank</b>	<b>Frequency</b>	<b>Percent</b>
<b>When did you open your first bank account with Ecobank Togo?</b>		
10-20 years	162	11.4
5-10 years	201	14.1
Less than 5 years	557	39.2
Over 20 years	159	11.2
<b>Have you ever transacted using digital platform?</b>		
No	542	38.1
Yes	765	53.8

#### 4.2.4: Digital banking operations

Among those who responded to the questions of digital banking operations, 67% said that they employ their mobile phone to have access their bank account balance, 57% use mobile phone to send money, 34% use mobile phone to pay bills, 24% use it to buy merchandises (Pay merchants) and 30% buy phone airtime. Note that where the percentages don't add up to 100% means some respondents skipped the question.

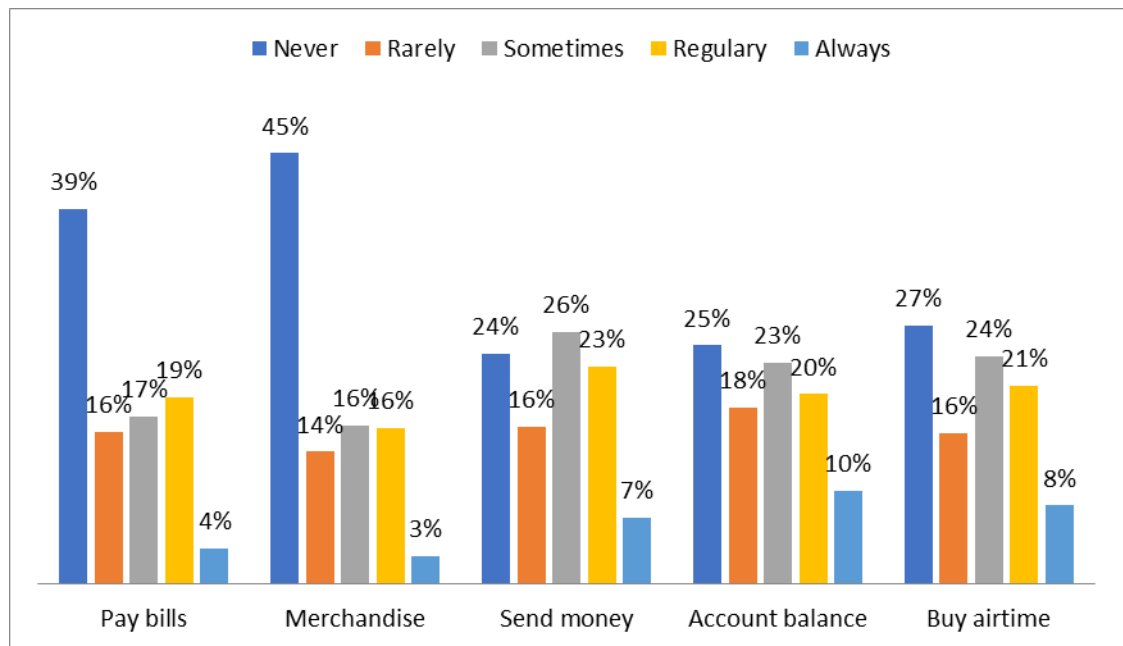
**Table 5 : Digital banking operations**

Digital banking operations	Frequency	Valid Percent
<b>Do you use your mobile phone to <i>check bank account balance</i>?</b>		
No	359	32.9
Yes	733	67.1
<b>Do you use your mobile phone to <i>send money</i>?</b>		
No	247	17.4
Yes	845	59.4
<b>Do you use your mobile phone to <i>pay bills</i>?</b>		
No	608	42.8
Yes	486	34.2
<b>Do you use your mobile phone to <i>buy merchandises</i>?</b>		
No	757	53.2
Yes	338	23.8
<b>Do you use your mobile phone to <i>buy airtime</i>?</b>		
No	685	48.2
Yes	419	29.5

Some respondents who already have access to mobile banking ranked the various mobile banking operations as shown in figure 4 below. 39% of respondents said that they never use their mobile phone top pay bills while 4% always use their mobile device to pay bills. 45% of respondents never use their mobile device to pay for merchandises while 3% of respondents always use their mobile device for the same. 16% of respondents never send money using mobile device while 7% always use their mobile device. 18% never check their bank account using mobile device while 10% of the respondents always do. 27% never buy airtime using their mobile banking while 8% always do. Considering “never” to be the only negative response, this implies that respondents have

61% probability of paying bills using mobile banking, 55% probability of paying merchandises using mobile banking, 76% probability of sending money using mobile banking, 75% probability of checking bank balance and 73% probability of buying airtime using mobile banking.

**Figure 4 : Frequency of use of mobile banking operations**



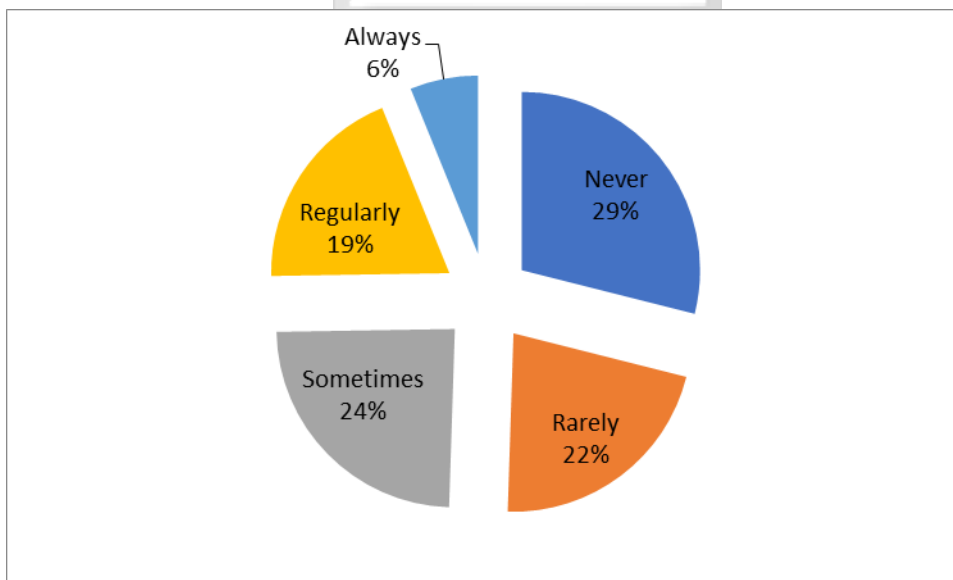
#### **4.3: Perception of respondents on factors affecting adoption of “mobile banking” in Togo**

Respondent were requested to rank on a scale of 1 to 5 how “ease of use”, “perceived risk”, “perceived usefulness”, “social influence”, and “customer support influence” their decision to adopt the mobile banking technology as well as the use of mobile banking to transact especially by paying bills, paying for merchandises, sending money, checking bank account balance, and buying airtime.

#### 4.3.1: Ease of use

In general, 29% of respondents confirmed that ease of use never affects their decision to adopt or reject the mobile banking technology. 22% rarely consider ease of use in mobile banking adoption, 24% sometimes considers ease of use as an significant criteria while 19% regularly considers ease of use as an important criteria. Only 6% of respondents always consider ease of use as imperative before adopting or rejecting the mobile banking. Rarely, sometimes, regularly and always have a combined percentage of 71%. This implies that there is 71% chances that respondents consider ease of use a key feature, though the frequency at which they consider it important may vary. This means that ease of use has 71% explanatory power when it comes to the adoption of “Mobile banking”.

**Figure 5: Ease of use and mobile banking adoption**



Respondents equally expressed their opinion regarding the extent to which ease of use influences their decision to transact using a mobile banking technology. Across all transactions, there is a higher tendency of respondents not being influenced by ease of use to make decision. “Never” had the majority of respondents while “always” had the minority. This implies that respondents do not always consider ease of use as an

significant factor while choosing to pay bill, send money, pay for merchandises, inquire bank account balance, or send money using a mobile banking technology.

About the mean of the Likert scale, checking bank balance had the highest mean of 2.6, followed by buying airtime and pay bill with a mean of 2.4 each. All these mean tend towards sometimes and rarely. This indicates that respondents are more interested in ease of use mostly when checking bank balance.

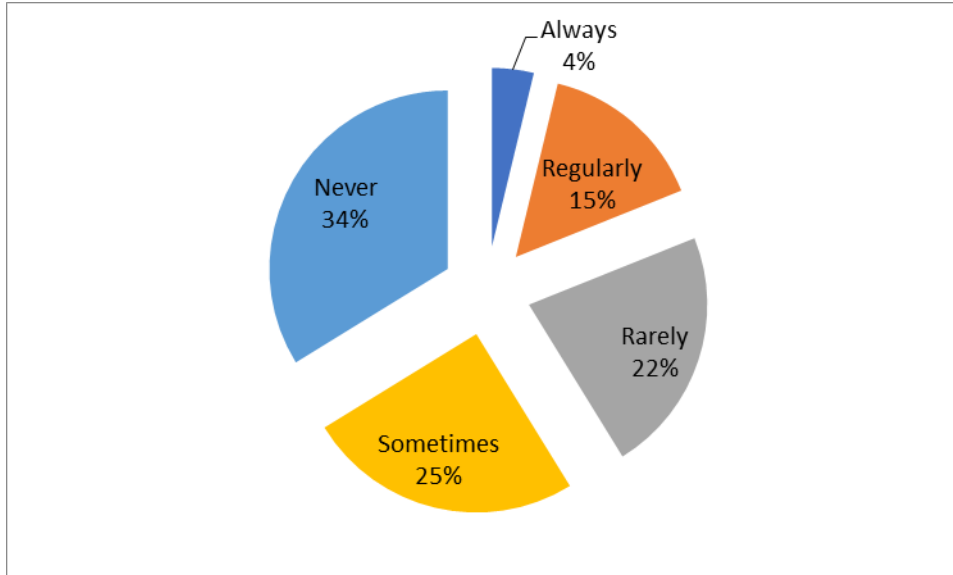
**Table 6 : Influence of ease of use on mobile banking transactions**

<b>Likert scale</b>	<b>Pay bills</b>	<b>Sending money</b>	<b>Pay merchandises</b>	<b>Bank balance</b>	<b>Buy airtime</b>	<b>Total (N)</b>
	<b>N</b>	<b>N</b>	<b>N</b>	<b>N</b>	<b>N</b>	
<b>Never</b>	483	372	560	396	469	2280
<b>Rarely</b>	252	288	273	263	270	1346
<b>Sometimes</b>	301	318	258	329	321	1527
<b>Regularly</b>	235	281	176	246	207	1145
<b>Always</b>	80	97	87	125	99	488
<b>Mean±SD</b>	2.4±1.3	2.3±1.3	2.2±1.3	2.6±1.3	2.4±1.3	

#### **4.3.2 Perceived risk**

In general, perceived risk of mobile banking never influences adoption decision of 34% of respondents, 25% sometimes, 22% rarely, 15% regularly and 4% always. There is propensity of respondents not being influenced by perceived risk in making decision to adopt or to reject a mobile banking technology. Only 4% of respondents are always influenced by perceived risk while making adoption decision. 15% are regularly influenced, 22% are rarely influenced, and 25% sometimes and 34% never give a thought at perceived risk while adopting or rejecting a mobile banking technology. Always, rarely, regularly and sometimes have a combine probability of 66%. This implies that there is 66% probability for a respondent to consider perceived risk as an important factor of adoption, though the frequency might vary from always to rarely. This means that perceived risk has about 66% explanatory power with regards to acceptance of mobile banking App.

**Figure 6 : Perceived risk and mobile banking adoption**



“Never” had the largest number of respondents across all mobile banking transactions, followed by “sometimes”, “rarely” “regularly” and lastly “always”. As to how much perceived risk influences the use of various mobile banking transactions, checking bank balance had the highest mean of 2.4 while the rest of transactions had a mean of 2.3. All these means tend towards rarely which implies that perceived risk rarely influences adopters in using various mobile banking solutions and transactions.

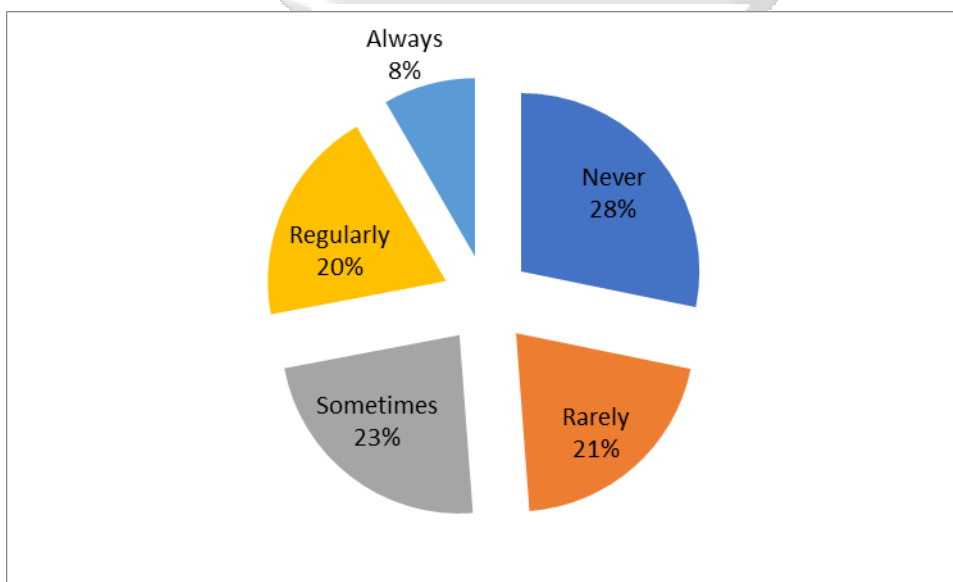
**Table 7 : Influence of perceived risk on mobile banking transactions**

Likert scale	Pay bills	Sending money	Pay merchandises	Bank balance	Buy airtime	Total(N)
	N	N	N	N	N	
Never	486	483	511	455	485	2420
Rarely	267	264	249	281	279	1340
Sometimes	323	357	318	321	326	1645
Regularly	175	160	156	183	157	831
Always	80	70	91	100	92	433
Mean±SD	2.3±1.3	2.3±1.2	2.3±1.3	2.4±1.3	2.3±1.3	

#### 4.3.3 Perceived usefulness

From general perception of respondents, only 8% always consider perceived usefulness as an influencer to mobile banking adoption. 20% regularly consider it influential, 23% sometimes consider it influential, 21% rarely consider it influential while 28% never consider perceived usefulness to be influential on mobile banking adoption decision making. Always, regularly, sometimes and rarely have a combined percentage of 72%. This means that there is 72% chances that a respondent may consider perceived usefulness as an important adoption factor. This implies that perceive usefulness has 72% explanatory power with regards to adoption of mobile banking.

**Figure 7 : Perceived usefulness and mobile banking adoption**



The table below shows that “never” had the greatest number of mentions from all respondents followed by “sometimes” and “always” came last with only 512 mentions. This shows a general tendency towards where respondents do not consider perceived usefulness as an important adaption factor. Regarding mobile transactions, sending money had the highest mean of 2.7, followed by bank balance at 2.6. All the mean are between 2 (rarely) and 3 (sometimes) indicating that respondents only consider important perceived usefulness sometimes or rarely. Respondents mostly consider perceived usefulness as important mainly when sending money and checking bank account balance.

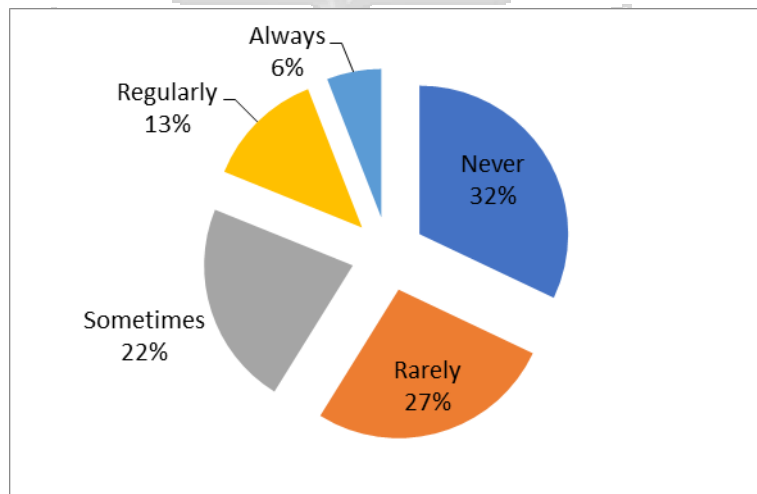
**Table 8 : Influence of perceived usefulness on mobile banking transactions**

Likert scale	Pay bills		Sending money		Pay merchandises		Bank balance		Buy airtime		Total(N)
	N	%	N	%	N	%	N	%	N	%	
<b>Never</b>	427	30	328	23	495	35	349	25	445	31	2044
<b>Rarely</b>	278	20	250	18	272	19	300	21	268	19	1368
<b>Sometimes</b>	302	21	352	25	303	21	315	22	320	23	1592
<b>Regularly</b>	255	18	264	19	193	14	246	17	197	14	1155
<b>Always</b>	82	6	120	8	74	5	127	9	109	8	512
<b>Mean±SD</b>	2.5±1.3		2.7±1.2		2.3±1.3		2.6±1.3		2.5±1.3		

#### 4.3.4 Social influence

Only 6% of respondents always consider social influence an important factor before adapting mobile banking technology. 13% consider it regularly, 22% only sometimes, 27% rarely while 32% never think social influence is an important adoption factor. In the same way, always, regularly, sometimes, and rarely have a combined probability of 68%. This implies that social influence has around 68% explanatory power when it comes to acceptance of mobile banking.

**Figure 8 : Social influence and mobile banking adoption**



The table 9 below shows that “never” had the majority of respondents, followed by “rarely”, “sometimes”, “regularly” and “always”. This indicates low level of concern regarding social influence being an important adoption factor.

Similar sentiments are expressed by the low mean across all mobile money transactions which had a mean of 2.3 except paying for merchandises which had a mean of 2.2. These means tend towards “rarely” indicate that respondents rarely consider social influence as critical while adoption mobile banking innovations. This may lead to a conclusion that social influence has little impact on adoption decision.

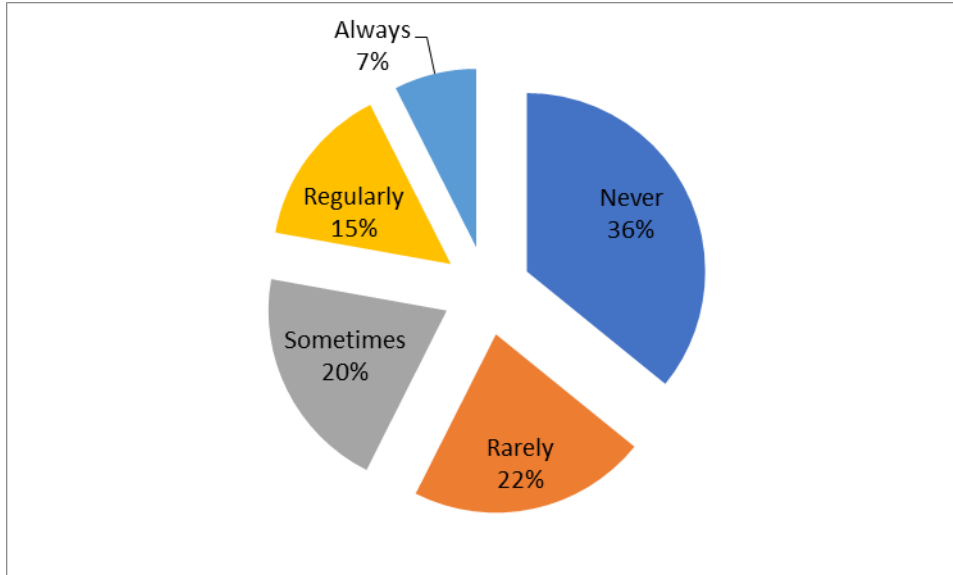
**Table 9 : Influence of social influence on mobile banking transactions**

<b>Likert scale</b>	<b>Pay bills</b>		<b>Sending money</b>		<b>Pay merchandises</b>		<b>Bank balance</b>		<b>Buy airtime</b>		<b>Total(N)</b>
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	
<b>Never</b>	453	32	423	30	527	37	410	29	433	30	2246
<b>Rarely</b>	362	25	333	23	336	24	348	24	297	21	1676
<b>Sometimes</b>	267	19	323	23	261	18	329	23	279	20	1459
<b>Regularly</b>	169	12	194	14	139	10	170	12	179	13	851
<b>Always</b>	94	7	73	5	83	6	80	6	79	6	409
<b>Mean±SD</b>	2.3±1.3		2.3±1.2		2.2±1.2		2.3±1.2		2.3±1.3		

#### **4.3.5 Customer support**

From a general perspective, only 7% of respondents who care about the level of customer support before adopting mobile banking technology. 15% care regularly, 20% care sometimes, 22% rarely care, and 36% never care about customer support. Always, regularly, sometimes and rarely have combined probability of 64%. This implies that customer support has about 64% explanatory power with regards to adoption of mobile banking.

**Figure 9 : Customer support and mobile banking adoption**



The tendency in figure 9 is expressed in the table below. “Never” had the highest number of mentions among respondents and “always” had the least. The mean of the Likert scale are equally low across all transactions with the mean tending to rarely. This implies that in general, customer support is rarely considered important by when making decision to adopt or reject a mobile banking technology.

**Table 10 : Influence of customer support on mobile banking transactions**

Likert scale	Pay bills		Sending money		Pay merchandises		Bank balance		Buy airtime		Total(N)
	N	%	N	%	N	%	N	%	N	%	
Never	500	35	468	33	567	40	461	32	569	40	2565
Rarely	263	18	259	18	280	20	259	18	322	23	1383
Sometimes	328	23	325	23	264	19	343	24	249	18	1509
Regularly	188	13	207	15	161	11	183	13	142	10	881
Always	61	4	88	6	66	5	93	7	72	5	380
Mean±SD	2.3±1.2		2.4±1.3		2.2±1.2		2.4±1.3		2.1±1.2		

Since each of the independent variables independently influences the dependent variable, it is important to carry out a correlation analysis to determine how much exactly when the variables each of the dependent variables affect the dependent variable.

#### 4.4 Principal Components Analysis (PCA)

The principal components analysis test was done to visualize how the independent variables affect adoption of mobile banking technology in Togo. Two components were extracted using the Principal Components Analysis method on SPSS. From our regression analysis conducted in table 4.12, all the independent variables (a part from social influence) significantly affect mobile banking adoption. Consequently, the PCA analysis seeks to find out which among the 4 factors has greater impact on adoption decision for mobile banking technology.

Our analysis extracted only one Principal Component (PCA1) that strongly correlates with 3 factors which are pay bill, pay merchandise and sending money. The rest of the factors have a weaker correlation hence not key influencers on adoption practice.

**Table 11 : Correlation matrix**

Mobile banking transaction	PCA1
Check account balance	.658
Buy airtime	.689
Send money	.702
Pay bills	.552
Pay merchandises	.509

The table below explains the PCA1 output from the SPSS. PCA1 is made up of three factors which are checking account balance, buying airtime and sending money. These three factors cumulatively constitute 63% all mobile banking transactions.

**Table 12: Table Total variance explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.150	62.991	62.991	3.150	62.991	62.991

## 4.5 Correlation analysis

### 4.5.1 Bivariate Correlation

Spearman's correlation was used to perform bivariate correlation analysis between the factors that affect acceptance of "mobile banking" and the adoption of mobile banking itself. Significant strong positive correlations were observed between all the assessed factors and the adoption of "mobile banking" (Table 11). However, the factors with the strongest positive correlations (r) were ease-of-use, and perceived usefulness.

The rest of the factors had relatively strong positive correlations with customer support having the weakest r of 0.47.

**Table 13. Correlation between dependent and independent variables**

Factors that influence mobile banking adoption (Independent factors)	Adoption of mobile banking practices (Dependent factor)	
	Pearson Correlation (r)	Sig. (p value)
Ease of use	.755**	.000
Perceived risk	.543**	.000
Perceived usefulness	.672**	.000
Social influence	.512**	.000
Customer support	.470**	.000
**. Correlation is significant at $p < 0.01$		

#### 4.5.2 Multicollinearity analysis

Multicollinearity analysis was done to determine whether the independent variables are truly independent or if there exists a degree of correlation between variables. The table 12 below shows that there exists a strong positive correlation between all independent variables. Ease of use and perceived usefulness have the strongest correlation with an  $r$  of 0.83.

**Table 14 Multicollinearity**

	Ease of use	Perceived risk	Perceived usefulness	Social influence	Customer support
Ease of use	1				
Perceived risk	.594**	1			
Perceived usefulness	.830**	.605**	1		
Social influence	.612**	.549**	.695**	1	
Customer support	.592**	.446**	.644**	.734**	1
**. Correlation is significant at the 0.01 level (2-tailed).					

#### 4.6 Regression analysis

A multiple regression analysis was conducted to establish the relationship between the dependent variable and the independent variables. The output of multiple regression analysis gives a summary of the model, Analysis of Variance (ANOVA) and the regression coefficients table. The tables below summarize the various results from regression analysis.

The model summary table explains the coefficient of determination ( $R^2$ ) which measures the accuracy or the likelihood of the model to predict outcomes in the future. In our case study,  $R^2$  explains the combined contribution of the five independent variables under study (ease of use, perceived risk, perceived usefulness, social influence, and customer

support) towards the variation observed in the dependent variable (Mobile banking adoption).

**Table 15 : Model summary**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error
1	.679 <sup>a</sup>	.462	.459	.73459839

From table 15, the value of  $R^2$  is 0.46 which implies that only 46% of the variance observed in mobile banking adoption practices can be explained and predicted using the regression model. 54% of the variance observed could not be explained or predicted using our model. This variation could be due to other independent factors that were not captured in this study.

The analysis of variance (ANOVA) tests the significance of the model which helps in determining whether to accept or reject our H1 hypothesis.

**Table 16 : ANOVA (Analysis of Variance)**

	Sum of Squares	df	Mean Square	F	Sig.
Regression	555.216	5	111.043	205.775	.000
Residual	647.562	1200	.540		
Total	1202.777	1205			

From table 16, the p-value is 0.00 at 95% confidence level. If the p-value is less or equals to 0.05, this implies that the model is statistically significant and is able to predict the relationship between mobile banking adoption and the various independent variable. The regression analysis also gave the multiplying factors (beta coefficients) for every independent variable as shown in the table below. These coefficients were used to complete the regression model equation.

**Table 17 : Regression coefficients**

<b>Model</b>	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>t</b>	<b>Sig.</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
(Constant)	1.654	.057		28.86	.000
Ease-of-use	.269	.023	.335	11.49	.000
Perceived risk	.160	.022	.192	7.31	.000
Perceived usefulness	.125	.023	.162	5.36	.000
Social influence	.004	.023	.005	.17	.860
Customer support	.117	.021	.151	5.57	.000

Using the coefficients in table 17, this study's regression model becomes:

The multiple regressions analysis used in this model is:

$Y = 1.65 + 0.27X_1 + 0.16X_2 + 0.13X_3 + 0.00X_4 + 0.12X_5$ , Where Y=Mobile banking adoption,  $\alpha$ =Constant, X1=ease of use, X2=perceived risk, X3=perceived usefulness, X4=social influence, and X5=customer support.

These coefficients can be interpreted to mean that if all independent variables were held at zero, the value of the dependent variable would be equal to a constant=1.65. Similarly, if all other independent variables were held constant, ease of use impacts 0.27 of mobile banking adopters; all factors held constant, perceived risk impacts 0.16 of mobile banking adapters; all factors held constant, perceived usefulness impacts 0.13 of mobile banking adopters, all factors held constant, social influence has no impact on mobile banking adaption, and customer support impacts 0.12 of mobile banking adopters if all other independent variables were held constant.

## **CHAPTER FIVE**

### **DISCUSSION, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter contains four subsections, which are summary, discussions, conclusions and recommendations. The summary and discussion section provides highlights of the important elements of the study objectives, methodology and results per analysis, as the discussion gives the relationship between the major findings and the study objectives. The conclusion section gives deductions based on study analysis in comparison to other empirical studies. The recommendation section suggests ways to improve adoption of mobile banking technology in Togo as well as suggestion for further studies.

#### **5.2 Summary and discussions**

The purpose of this study was to determine the factors that influence adoption of mobile banking technology in Togo. The study was guided by the following research questions: What are the factors that influence mobile banking adoption? What are the topmost influential factors of mobile banking adoption in Togo?

To answer these questions, the researcher adopted both desk research and field data collection. Primary data was collected from 1422 respondents from Togo who are also Ecobank clients. An online structured questionnaire was used for data collection. SPSS was used for analysis. The analysis methods included frequencies, mean and standard deviation, Pearson correlation, regression analysis and Principal Components Analysis. The analyzed data was presented in form of table and pie chart graphs.

The study revealed that majority of the respondents (44%) was between the age of 20-30 years. Also, 39% of the respondents opened their bank account with Ecobank Togo not more than five years ago.

Even though all the respondents were Ecobank clients and have once used the Ecobank mobile banking application, the study revealed that only 67% use their mobile phone to check bank account balance, 59% to send money, 34% to pay bills, 24% to buy merchandises, and 30 to buy airtime. In addition, respondents use mobile banking to

carry out various transactions and varying frequency. For example, 4% always use mobile banking to pay bills, 10% always check their bank balance using mobile banking application. In general, there is high propensity of respondents to transact using mobile banking application (rarely, sometimes, regularly, always) than not to transact (never).

Regarding the adoption factors, the combined probability of respondents to consider them important (either rarely, sometimes, regularly or always) was always high than that of never considering them important (never). For instance:

Only 29% of respondents indicated that ease of use is never an important adoption factor to them. The rest may consider it important sometimes, rarely, regularly or always. However, the study showed that respondents are more interested in ease of use when sending money than when carrying out other transactions. According to Luarn and Lin (2005), when a mobile banking service has a user-friendly interface, users see them as easy to use and hence develop a positive attitude. This is in line with 71% of respondents' sentiments, who perceive the Ecobank app to be user friendly.

Analysis on independent factors revealed that 34% of respondents never consider perceived risk as an important adoption factor. The rest do but not always. However, perceived risk is rarely considered important while carrying out various transactions. Customers are reluctant to adopt a "mobile banking" technology if there is ambiguity (Baek and King, 2011). Risk is an expectation of loss (Mitchell, 1999). According to Ecobank, the mobile banking application is fully secured and that could be the reason why majority of the respondents transact without fear.

28% never consider perceived usefulness as an important adoption factor. The rest do but not always. This finding is in line with experimental findings of Zeithaml (1988) and Keeney (1999) that majority of adopters considers perceived relevance as an important adoption influencer.

32% never consider social influence as an important adoption factor while the rest do but not always. However, it is only considered important rarely. Majority of the adapter (68%) considers social influence as an important adoption factor. This construct echoes

findings by Nocolas et al. (2008) which revealed that social influence is a highly significant factor in predicting intentions of adoption.

36% never consider customer support as an important adoption factor. Those who do, only do it rarely while carrying out the various transactions.

The Pearson correlation analysis revealed that all the independent factors have a positive correlation with the adoption of mobile banking. However, ease of use and perceived usefulness had the strongest correlation coefficients with  $r=0.755$  and  $r=0.672$  respectively. This imply that an improvement in the independent variables can lead to increased mobile banking adoption. At the same time, the multicollinearity analysis revealed that the independent factors are not truly independent because there exist positive strong correlations among the independent factors themselves.

The study through the principal components' analysis revealed that bill payments, pay merchandises and sending are constitute the most used transactions by respondents. However, correlation analysis revealed that ease of use and perceived usefulness have the strongest positive relationship with the dependent variable.

### **5.3 Conclusions**

This study concludes that the five adoption factors are significant influencers of mobile banking adoption in Togo. The level of importance of a factor depends on the transaction at hand. For example, the study showed that ease of use is considered more important when sending money than when carrying out other transactions. However, this importance is not there always but varies from rarely, sometimes and regularly. Mobile banking is used for various transactions. For Ecobank Togo, majority of its clients use their mobile banking application to send money, to check account balance and to buy airtime.

The study also concluded that social influence is the factor with the least perceived importance because it had the smallest mean on the Likert Scale ranking. Importance of the factors is highly dependent of the transaction.

The Pearson correlation analysis made it clear that ease of use and perceived usefulness are the factors that correlates strongly (positive) with the adoption of mobile banking in Togo. This implies that, for Ecobank to improve their mobile banking adoption in Togo, they have to put more focus on these two factors than the rest.

#### **5.4 Recommendations**

Based on the findings of this study, two levels of recommendations were made for practical implementation by Ecobank and for further studies.

##### **5.4.1. Practical Implications**

This study starts by recommending that Ecobank should focus more on enhancing ease of use, perceived usefulness, customer support and reduce perceived risk for their mobile banking application. These adoption factors not only determine the initial acceptance of the application but also influence the repeated use especially when carrying out transactions using mobile banking.

Money sending functions of the Ecobank application should be easy to use. This is because the research revealed that the “Ease of use” factor is particularly important when sending money. In the same note, Pearson correlation revealed that ease of use and perceived usefulness positively and strongly contribute to increased adoption of mobile banking. Hence the need for Ecobank to focus more on improving these two factors. Ecobank should add more uses cases and added value services like billers on its Mobile app and make it more user-friendly.

Social influence came out as the factor with the least influence on mobile banking adoption decision. This led us to recommend that all marketing, advertisement and awareness campaign should be individualized and aligned on its customer segmentation as much as possible instead of targeting crowds.

Since there is always resource constraints and the study confirms that the first three independent variables (Ease of use, Perceived risk & Perceived usefulness) explains the dependent variable by over 87%, it means that if Ecobank wants to improve mobile

banking adoption, it needs to invest its resources in the order of priority, on ease of use, perceived risk and Perceived usefulness.

Among the various mobile transactions, Ecobank should focus more on the Four most important one which are sending money, checking bank balance buying airtime and Pay Bill. Enhance usability features of these functions can highly improve users experience.

#### **5.4.2. Suggestions for further studies**

The study explored five factors that influence adoption decision of mobile banking technology in Togo for Ecobank clients. The regression analysis indicated that these five factors accounts only for 46% of variability in adoption decisions. We therefore recommend that further studies explore additional factors to increase the variance explained by the independent factors. Given that Togo is not a leader in mobile money, this study can be expanded to a country that is recognized as a leader in mobile money like Kenya. A study can also be done to cover other banks in Togo in the context for a comparative analysis. Additionally, further research can be conducted to determine the impact of mobile banking on non-bank institutions and organizations.

#### **5.6 Limitations**

This research is expected to face several constraints which include time and confidentiality compromise. Limiting timeframe allowed by SBS will only allow us to collect and analyze quantitative data. Given that the researcher is an employee of the Ecobank, he has contractual obligations regarding confidentiality hence some research findings might not be included in a public report.

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## APPENDICES

### APPENDIX 1 : INTRODUCTION LETTER



Strathmore Business School

Ecobank,  
2365, Boulevard du Mono  
B.P. 3261, Lomé,  
Togo.



Monday, 03 December 2018

Dear Sir/ Madam,

#### RE: FACILITATION OF RESEARCH – TOLLA KONAN

Greetings from Strathmore University Business School (SBS).

This is to introduce Tolla Konan who is an MBA student at Strathmore Business School, admission number MBA/88075/15. As part of our MBA Program, Tolla is expected to do applied research and to undertake a project. This is in partial fulfilment of the requirements of the MBA course. To this effect, he would like to request for appropriate data from your organization.

Tolla is undertaking a research paper on '**Determinants of Mobile Banking Adoption: Ecobank Experience in Togo**'. The information obtained from your organization shall be treated confidentially and shall be used for academic purposes only.

Our MBA seeks to establish links with industry, and one of these ways is by directing our research to areas that would be of direct use to industry. We would be glad to share the findings with you after the research, and we trust that you will find them of great interest and of practical value to your organization.

We appreciate your support and we shall be willing to provide any further information if required.

Yours sincerely,

Caroline Tiara,  
Manager – MBA Programs.



**Strathmore**  
UNIVERSITY

Ole Sangale Road, Madaraka Estate P.O. Box 59857 - 00200 Nairobi, Kenya  
Cell: +254 703 034 414  
Email: [info@sbs.ac.ke](mailto:info@sbs.ac.ke) or visit [www.sbs.ac.ke](http://www.sbs.ac.ke)  
Twitter: @SBSKenya.

## APPENDIX 2 : POSITIVE RESPONSE FROM ECOBANK TOGO



Caroline TIARA  
Manager-MBA Programs  
Strathmore Business School,  
Ole Sangale Road, Madaraka Estate  
P.O Box 59857 – 00200 Nairobi,  
Kenya.

Friday, 14 December 2018

Dear Madam,

Re: Facilitation of research –Tolla KONAN

We acknowledged receipt of your letter dated December 03, 2018, informing us of the research to be undertaken by Mr Tolla Konan as part of the requirements of his MBA course.

This is to confirm our full cooperation for the success of this research project and therefore we allow him to carry it out by giving him access to the appropriate data from our organization.

Your contact on this project is Mrs Nina ANANI-TOULASSI.

We will be expecting a copy of the findings once this project is completed.

Yours sincerely,

  
Ayoko KANGNI  
Country HR Head



Ecobank Togo  
20, Avenue Sylvanus Olympio, Lomé | B.P. 3302, Lomé  
Tél. : (228) 22 21 72 14 Fax : (228) 22 21 42 37 Email : ecobanktg@ecobank.com  
www.ecobank.com

## APPENDIX 3 : QUESTIONNAIRE

### QUESTIONNAIRE ON THE DETERMINANTS OF MOBILE BANKING ADOPTION

Dear respondent, the information collected using this questionnaire relates to mobile banking adoption in Togo. This exercise is an academic research and will be used for academic purposes only. All the answers you provide in this survey will be kept confidential. Kindly provide the requested information with honesty. This survey will take you less than 10 minutes to complete.

#### SECTION A: PERSONAL DETAILS

1. Gender

☐ Male

☐ Female

2. Age:

☐ Below 20

☐ 21-30

☐ 31-40

☐ 41-50

☐ Above 50

3. Marital status

☐ Married

☐ Single

☐ Separated

☐ Widowed

4. Highest level of education

☐ Primary school

☐ High school

☐ Diploma/Certificate

☐ Undergraduate

☐ Postgraduate

5. Employment status

☐ Self-employed

☐ Employed

☐ Unemployed

6. Your employment industry

- ☐Public sector (Civil Servant) ☐Oil&Gas ☐Agriculture  
☐Cement ☐Food Processing ☐Mining ☐Textiles ☐Trade  
☐Others ☐N/A

7. Monthly Income level

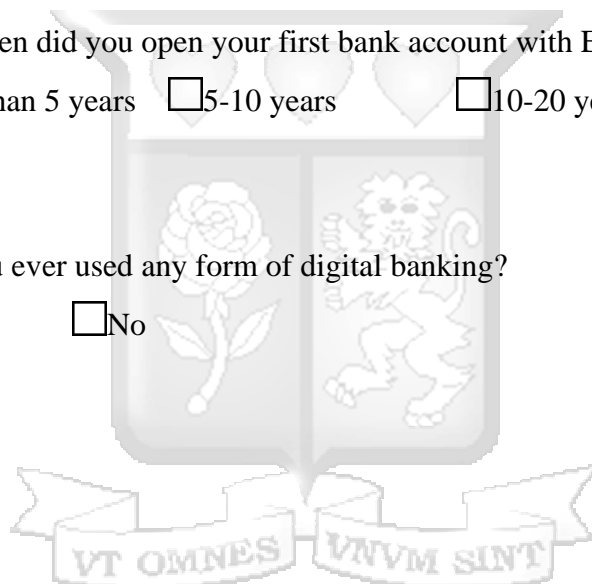
- ☐Below \$300 ☐\$300-\$500 ☐\$500-\$800  
☐\$800-\$1500 ☐\$1500-\$2500 ☐Over \$2500

8. Since when did you open your first bank account with Ecobank Togo?

- ☐Less than 5 years ☐5-10 years ☐10-20 years ☐Over 20 years

9. Have you ever used any form of digital banking?

- ☐Yes ☐No



## SECTION B: DEPENDENT VARIABLE

10. By answering the questions in this section, you help us in understanding the level at which you have adopted various mobile banking practices.

### Likert Scale:

1=Never/Jamais

2=Rarely/Rarement

3=Sometimes/Quelques fois

4=Regularly/Regulièrement

5=Always/Toujours

Adoption practice	Question	Adoption level				
		1	2	3	4	5
Bill payment	On a scale of 1 to 5, how much do you use your mobile phone to pay bills?	1	2	3	4	5
Merchant payment	On a scale of 1 to 5, how much do you use your mobile phone to pay merchants?	1	2	3	4	5
Remittance/send money	On a scale of 1 to 5, how much do you use your mobile phone to remit/send money?	1	2	3	4	5
Account balance	On a scale of 1 to 5, how much do you use your mobile phone to check account balance?	1	2	3	4	5
Buying airtime	On a scale of 1 to 5, how much do you use your mobile phone to buy airtime?	1	2	3	4	5

## PART C: INDEPENDENT VARIABLE

11. By answering the questions in this section, you help us in understanding the extent to which ease-of-use influences your decision to adopt a mobile banking practice.

### Likert Scale:

1=Never/Jamais                      2=Rarely/Rarement    3=Sometimes/Quelques fois  
4=Regularly/Regulièrement    5=Always/Toujours

#### 1. Ease of use

Adoption practice	Scale				
	1	2	3	4	5
How much does ease-of-use lead to your adoption of mobile banking in general?	1	2	3	4	5
How much does ease-of-use lead to paying your bills using mobile banking?	1	2	3	4	5
How much does ease-of-use lead you to sending money/doing payment using mobile banking?	1	2	3	4	5
How much does ease-of-use lead to you checking your bank balance using mobile banking?	1	2	3	4	5
How much does ease-of-use lead you to pay merchants using mobile banking?	1	2	3	4	5
How much does ease-of-use lead to you buying airtime using mobile banking?	1	2	3	4	5

12. By answering the questions in this section, you help us in understanding the extent to which perceived risk influences your decision to adopt a mobile banking practice.

**Likert Scale:**

1=Never/Jamais                      2=Rarely/Rarement    3=Sometimes/Quelques fois  
4=Regularly/Regulièrement    5=Always/Toujours

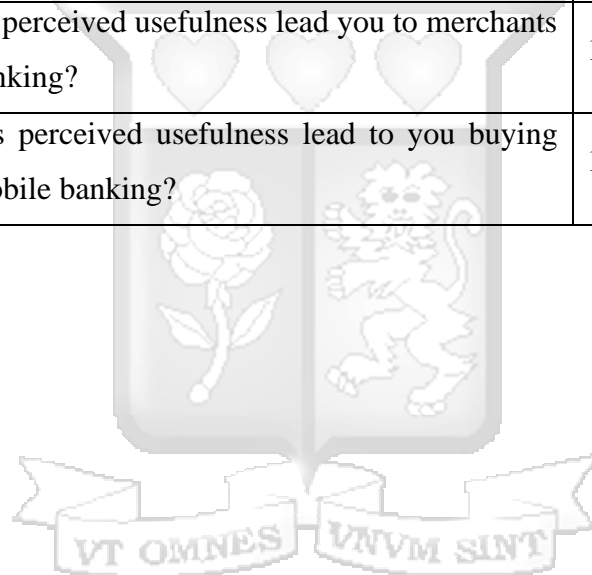
Perceived risk	Scale				
How much does perceived risk negatively influence your adoption of mobile banking in general?	1	2	3	4	5
How much does perceived risk prevent you to pay your bills using mobile banking?	1	2	3	4	5
How much does perceived risk prevent you to sending money/doing payment using mobile banking?	1	2	3	4	5
How much does perceived risk prevent to you to check your bank balance using mobile banking?	1	2	3	4	5
How much does perceived risk prevent you to pay merchants using mobile banking?	1	2	3	4	5
How much does perceived risk prevent you to buy airtime using mobile banking?	1	2	3	4	5

13. By answering the questions in this section, you help us in understanding the extent to which perceived usefulness influences your decision to adopt a mobile banking practice.

**Likert Scale:**

1=Never/Jamais                      2=Rarely/Rarement    3=Sometimes/Quelques fois  
4=Regularly/Regulièrement    5=Always/Toujours

Perceived usefulness	Scale				
How much does perceived usefulness lead to your adoption of mobile banking in general?	1	2	3	4	5
How much does perceived usefulness lead you to pay your bills using mobile banking?	1	2	3	4	5
How much does perceived usefulness lead you to sending money/doing payment using mobile banking?	1	2	3	4	5
How much does perceived usefulness lead to you checking your bank balance using mobile banking?	1	2	3	4	5
How much does perceived usefulness lead you to merchants using mobile banking?	1	2	3	4	5
How much does perceived usefulness lead to you buying airtime using mobile banking?	1	2	3	4	5



14. By answering the questions in this section, you help us in understanding the extent to which social-influence influences your decision to adopt a mobile banking practice.

**Likert Scale:**

1=Never/Jamais                      2=Rarely/Rarement    3=Sometimes/Quelques fois  
4=Regularly/Regulièrement    5=Always/Toujours

Social influence	Scale				
How much does social influence lead to your adoption of mobile banking in general?	1	2	3	4	5
How much does social influence lead you to pay your bills using mobile banking?	1	2	3	4	5
How much does social influence lead you to sending money/doing payment using mobile banking?	1	2	3	4	5
How much does social influence lead you to checking your bank balance using mobile banking?	1	2	3	4	5
How much does social influence lead you to pay merchant using mobile banking?	1	2	3	4	5
How much does social influence lead you to buying airtime using mobile banking?	1	2	3	4	5

15. By answering the questions in this section, you help us in understanding the extent to which customer support influences your decision to adopt a mobile banking practice.

**Likert Scale:**

1=Never/Jamais                      2=Rarely/Rarement    3=Sometimes/Quelques fois  
4=Regularly/Regulièrement    5=Always/Toujours

Customer support	Scale				
How much does customer support lead to your adoption of mobile banking in general?	1	2	3	4	5
How much does customer support lead you to pay your bills using mobile banking?	1	2	3	4	5
How much does customer support lead you to sending money/doing payment using mobile banking?	1	2	3	4	5
How much does customer support lead to you checking your bank balance using mobile banking?	1	2	3	4	5
How much does customer support lead you to pay merchants using mobile banking?	1	2	3	4	5
How much does customer support lead to you buying airtime using mobile banking?	1	2	3	4	5

**THANK YOU FOR TAKING PART**

## **APPENDIX 4: ECOBANK GROUP MOBILE APPLICATION STATISTICS**

### **Ecobank Togo**

Ecobank Togo was the first affiliate branch opened in 1988 by Ecobank Transnational Incorporated (ETI). The Group is geographically present in 33 African countries. These countries are : South Africa, Angola, Benin, Burkina Faso, Burundi, Cameroon, Cap-Verde, Congo (Brazzaville), Congo (DRC), Cote d'Ivoire, Ethiopia, Gabon, Gambia, Ghana, Guinee, Guinee-Bissau, Equatorial Guinee, Kenya, Liberia, Malawi, Mali, Niger, Nigeria, Uganda, Central Africa Republic, Rwanda, Sao Tomé nd Principe, Senegal, Sierra Leone, South Soudan, Tanzania, Tchad, Togo, Zambia, Zimbabwe and Mozambique. The group is also present in France as a corporate bank entity. ETI has representation office in Dubaï, London and Beijing.

ETI is present in Lagos, Accra and Abidjan Stock Exchanges and has 600 000 individual and institutional shareholders. The group has 19 200 employees coming from 40 countries. Ecobank offers traditional banking services to individuals and corporates (Multinationals, governments, Financial institutions, Small and medium enterprises, etc...). Ecobank's services range from Account services (Current and saving), and cash management services.



## MOBILE APPLICATION STATISTICS

### Mobile App users

Onboarding chanel	Ecobank Group	Ecobank Togo	Ecobank Togo %
Manual	617,726	838	0,1%
Branch	1,525	7	0,5%
Internet Banking	193 947	8 151	4,2%
Cards	477 706	9,263	1,9%
USSD	1 107 047	-	0,0%
Xpress account	6 339 038	432 803	6,8%
<b>Number of Mobile app users</b>	<b>8 736 989</b>	<b>451 062</b>	<b>5,2%</b>

Existing clients with the app	1 290 904	18 259
Total Number of clients	19 000 000	634 011
% of existing clients that have downloaded the app	7%	3%
Transacting customers (Active users)	586 374	5 330
<b>Active users rates</b>	<b>7%</b>	<b>1%</b>

### Ecobank Pay

	Ecobank Group	Ecobank Togo	%
Total nb of Merchants	104 000	3 116	3,0%
Total Nb of Trn	887 000	77 651	8,8%
Transaacting Merchants	22 157	1 352	6,1%
Active Merchant rate	21,30%	43,39%	
Transacting customers	26 254	1 134	4,3%

### Mobile app Transactions

	Ecobank Group	Ecobank Togo	%
Transacting customers	586 374	5 330	0,9%
Bill Payment volume	341 000	1 338	0,4%
Merchant Payment	887 000	70 000	7,9%
Xpres Cash	825 000	25 000	3,0%
Airtime	23 000 000	671	0,0%
Fonds Transfer	12 000 000	82 000	0,7%
<b>Total Nb of Transactions</b>	<b>37 639 374</b>	<b>184 339</b>	<b>0,5%</b>

Nb of Downloads	
IOS	2 610 923
Android	255 820
Total Downloads	2 866 743

Billers	
Group	557
Ecobank Togo	9

## APPENDIX 5 : SAMPLE SIZES

For different sizes of population at a 95 per cent confidence level (assuming data are collected from all cases in the sample)<sup>1</sup>

Population	Margin of error			
	5%	3%	2%	1%
50	44	48	49	50
100	79	91	96	99
150	108	132	141	148
200	132	168	185	196
250	151	203	226	244
300	168	234	267	291
400	196	291	343	384
500	217	340	414	475
750	254	440	571	696
1 000	278	516	706	906
2 000	322	696	1091	1655
5 000	357	879	1622	3288
10 000	370	964	1936	4899
100 000	383	1056	2345	8762
1 000 000	384	1066	2395	9513
10 000 000	384	1067	2400	9595

<sup>1</sup> Source : Research Methods for Business Students, Page 266 ( Mark SAUNDERS, Philip LEWIS, Adrian THORNHILL)