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Improving Mobile Phone Banking Usefulness, Usability, Risk, Cost, and Intention to Adopt

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
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Abstract

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MBA, University of Moncton, 2012

BA, University of Ouagadougou, 2003

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Walden University

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Abstract

Millions of people use mobile phone banking daily, and business leaders should understand the factors influencing mobile phone banking adoption among users. Based on the theory of technology acceptance model and the innovation diffusion theory, the purpose of this correlational study was to examine the relationship between usefulness, ease of use, risk, cost, and mobile phone banking adoption in Burkina Faso. One hundred and six mobile phone banking users living in the city of Ouagadougou completed the online survey created to measure consumers understanding of mobile phone banking. Results of the multiple linear regression analysis indicated a statistically significant relationship between the predictor variables and mobile phone banking adoption, $F(5,101) = 36.07$, $p < .001$. Three of the predictors contributed significantly to the model, with usefulness recording the highest beta value ($ß = .692$), cost the next highest beta value ($ß = .225$), and ease of use the next highest beta value ($ß = .173$). The 4th predictor, risk, did not contribute significantly to the model, recording a negative beta value ($ß = -.058$). Results may enhance local business leaders' understanding of mobile phone banking adoption, which could result in more effective business strategies to increase the affordability, availability, and quality of mobile banking services for Burkina Faso residents. Development of the mobile phone banking industry could enable business leaders to foster access to affordable financial services for individuals and contribute to the development of Burkina Faso's local economy and trade.

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Dedication

I would like to dedicate this study to my family and my parents (Alphonse, Andrea, Adama, Bintou, Olivia, and Boris) for all of their support throughout this journey. Thank you to my relatives for supporting me as I completed my assignments and my study. Without your support and encouragement, I would never have reached this point.

I would also like to dedicate this study to millions of individuals who do not have access to financial services in Burkina Faso. I hope business leaders in Burkina Faso will implement the results of this study to develop affordable mobile phone banking services to increase access to financial services for individuals and thereby improve people's living conditions.

Acknowledgments

I would like to acknowledge all of the individuals who helped me complete this doctoral study. I am truly grateful to my doctoral committee chair, Dr. Steve Roussas, for guiding me through this process. I would like to thank Dr. Sean Stanley, second committee member, and Dr. Julia East, my university research reviewer, for their insights and guidance throughout this study. I would also like to extend my gratitude to Dr. Leslie Miller my first committee chair, for her support and positive critique. I am highly indebted to my friends, Fidele Tapsoba, Pierre Tiendrebeogo, and Antoinette Traore, for their support and friendship.

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Section 1: Foundation of the Study

Mobile phone banking is one of the most widely used mobile technology applications in recent years (Parijat, 2016). Mobile banking, as a channel, has achieved a critical level of maturity across many countries, and bank industry leaders have made rapid progress in improving their mobile banking capabilities (Parijat, 2016). Despite the implementation of this technology, the acceptance of mobile phone banking is low in Burkina Faso (World Bank, 2015). Business leaders continue to face a challenging environment with respect to the adoption of mobile phone banking among customers (Olasina, 2015). The purpose of this quantitative correlational study was to examine the relationship between usefulness, ease of use, risk, cost, and mobile phone banking adoption in Burkina Faso.

Background of the Problem

Compared to traditional financial channels such as automated teller machines (ATMs) and Internet banking, with mobile phone banking individuals have more mobility and flexibility to access banking services (Parijat, 2016). Bank and financial institution managers provide mobile banking services to allow customers to perform some financial transactions remotely using a mobile phone or a mobile device (Parijat, 2016). In Africa, many telecommunication leaders also offer mobile payment services to increase peoples' use of mobile banking (Olasina, 2015).

The development of mobile phone technology has changed the industry of banking in Burkina Faso, as increasingly more consumers are adopting mobile phone banking (World Bank, 2015). In Africa, consumers' adoption of mobile phone banking

service depends on their understanding of the advantages of using the technology (Ali & Ismail, 2014). A need existed to examine the relationship between usefulness, ease of use, cost, risk, and mobile phone banking adoption in Burkina Faso. Research on factors related to mobile phone banking adoption in Burkina Faso might enable telecommunication leaders and marketers to understand the factors influencing mobile phone banking users' intentions, which might enhance the development of mobile phone banking industry in Burkina Faso.

Problem Statement

Regardless of the continuous increase in the number of mobile phone owners, peoples' use of mobile financial services in Burkina Faso, West Africa, is low compared to other parts of Africa (Demirguc-Kunt & Klapper, 2012). Despite a mobile phone penetration of 59.45% in Burkina Faso (Autorité de Régulation des Communications Electroniques et des Postes [ARCEP], 2013), only 3.1% of customers use mobile banking services (World Bank, 2015). The general business problem was that corporate leaders lack the knowledge needed to manage the low rate of adoption of mobile phone banking (Bankole, Osei-Bryson, & Brown, 2015). The specific business problem was that some corporate leaders do not understand the relationship between usefulness, ease of use, cost, risk, and mobile phone banking adoption.

Purpose Statement

The purpose of this quantitative correlational study was to examine the relationship between usefulness, ease of use, cost, risk, and mobile phone banking adoption. The independent variables were usefulness, ease of use, cost, and risk. The

dependent variable was mobile phone banking adoption. The target population was adult mobile phone owners, living in the city of Ouagadougou, who use mobile phone banking. The implications for positive social change include the potential to provide improved understanding of mobile phone banking industry to business leaders; to increase the affordability, availability, and quality of mobile banking for Burkina Faso residents; and to foster access to affordable financial services for individuals in Burkina Faso.

Nature of the Study

I chose the quantitative method to examine the relationship between the independent variable and the dependent variables. According to Yilmaz (2013), researchers use the quantitative method to examine the relationships and differences between and among variables. Therefore, I used the quantitative method because my focus was to determine the extent and nature of the relationship between four predictor variables and one criterion variable. Tendai and Richard (2012) suggested researchers use qualitative method to explore central phenomena and to gather information from open-ended questions. As a result, I did not use the qualitative approach for this study because I did not attempt to explore central phenomena. According to Field (2013), mixed methods research includes both quantitative and qualitative approaches in a single study. Thus, I did not use mixed methods because my study did not require qualitative data.

Researchers use the correlational design to examine the relationship between or among variables (Pazos, Chung, & Micari, 2013). I used the correlational design because my intent was to examine the relationship between the defined variables. Researchers

use an experimental design to control or randomly assign participants to levels of the variables (Yilmaz, 2013), which was not the case for this study. Therefore, I did not use an experimental design. Researchers use the quantitative descriptive design to describe the characteristics of a phenomenon (Field, 2013). I did not use the quantitative descriptive design because I did not attempt to describe the current characteristics of mobile phone banking in Burkina Faso.

Research Question

To what extent is there a statistical relationship between usefulness, ease of use, cost, risk, and mobile phone banking adoption in Burkina Faso?

Hypotheses

Null Hypothesis (H_0): There is no statistically significant relationship between usefulness, ease of use, risk, cost, and mobile phone banking adoption in Burkina Faso.

Alternative Hypothesis (H_1): There is a statistically significant relationship between usefulness, ease of use, risk, cost, and mobile phone banking adoption in Burkina Faso.

Theoretical Framework

In the late 1980s, Davis (1989) crafted the technology acceptance model (TAM) that researchers use for modeling user acceptance of information systems. Davis suggested TAM theory is a systems theory of how individuals come to accept and use technology. According to TAM, perceived usefulness and perceived ease of use are the most important determinants for technology acceptance among people (Davis, 1989). Rogers (1995) created the innovation diffusion theory (IDT) for explaining how

innovations are diffused through some channels among people and society over time. Using IDT theory, researchers focus on the perceived risk of an innovation to be introduced within a social system. Thus, researchers can use TAM and IDT to study the relationship between ease of use, usefulness, risk and the likelihood of adopting mobile phone banking.

Previous scholars have used TAM theory (Davis, 1989) to study mobile phone banking adoption among consumers (Aker & Mbiti, 2010; Ali & Ismail, 2014). I used TAM as a theoretical framework for conducting this empirical study because ease of use and usefulness are predictors that could likely influence mobile phone banking adoption in Burkina Faso (Tobbin, 2012). Furthermore, I used the IDT (Rogers, 1995) to extend the original TAM to assess the efficacy of predictors that may influence mobile phone banking adoption in Burkina Faso. Therefore, I used in this quantitative study the construct of risk from IDT as an independent variable of the enquiry. Finally, I used cost construct to complement IDT and TAM as part of the theoretical framework.

Operational Definitions

Cost: Cost refers to the extent to which a customer feels that using a mobile phone to perform financial transactions costs money (Mathew, Sulphey, & Prabhakaran, 2014). Customers consider the affordability of mobile phone banking before using the technology (Manoranjan & Pradhan, 2014).

Ease of Use: Ease of use is the extent to which the consumer believes that using mobile phone banking is effortless (Davis, 1989).

Mobile phone banking: Mobile phone banking refers to the use of a cellular device or a smartphone to undertake online banking transactions (Dennehy & Sammon, 2015).

Risk: Risk is the extent to which a customer feels he or she is at risk regarding his or her decision to use mobile phone banking (Mathew et al., 2014)

Usefulness: Usefulness is the degree to which a user believes that using the technology will increase performance (Davis, 1989).

Assumptions, Limitations, and Delimitations

Assumptions

I based this study on several assumptions. An assumption is a fact considered to be true but unverifiable (Tendai & Richard, 2012). The first assumption was that participants understood the content of the survey. The second assumption was that all participants responded to the surveys truthfully, independently, anonymously, and without coercion.

Limitations

Limitations are facts and occurrences that the researcher cannot address and are potential study weaknesses (Yilmaz, 2013). The first limitation was that participants may withdraw at any time; thus, participants who finished the study might not be truly representative of the population. The second limitation was that using Likert-type survey items in a correlational study limited research participants to a set of closed questions and responses, whereas with a qualitative approach, researchers can use open-ended questions to collect unrestrained responses (Yussoff & Janor, 2014).

Delimitations

Delimitations refer to the boundaries a researcher sets for a study (Allwood, 2012). The first delimitation was that participation was for individuals who possess computer skills, Internet service, and access to a computer to take the online survey. The second delimitation was participation was delimited to adult mobile phone users living in the city of Ouagadougou, Burkina Faso. The third delimitation was that the results of the study may not be generalizable to other populations in Burkina Faso.

Significance of the Study

Contribution to Business Practice

The findings of this study may be of value to business by enabling telecommunication leaders and marketers to understand mobile phone banking users' expectations and to develop strategies to satisfy consumers' needs in Burkina Faso. The results of the study could contribute to business practice by providing information that managers and marketers can use to design and implement strategies for catalyzing close relationships with mobile banking retailers to increase consumers' satisfaction and the number of customers in Burkina Faso. The increased use of mobile phone banking services might result in more financial resources that telecommunication managers can invest in the mobile banking industry to reduce the cost of access to mobile banking services for Burkina Faso residents.

Implications for Social Change

The implications for positive social change could include the potential to provide improved understanding of mobile phone banking industry to business leaders; to

increase the affordability, availability, and quality of mobile banking service for Burkina Faso residents; and to foster access to affordable financial services for individuals in Burkina Faso. Increasing the number of affordable telecommunication services, users could contribute to the development of Burkina Faso local economy and trade (Bankole et al., 2015).

A Review of the Professional and Academic Literature

The literature review of this study consisted of a critical analysis and synthesis of relevant literature associated with the theoretical framework, the study's variables (usefulness, ease of use, risk, cost, and intention to adopt mobile phone banking), factors influencing mobile phone banking adoption, and mobile phone banking evolution. The literature review included discussion of contemporary literature, seminal literature, and historical literature on mobile phone banking. I reviewed literature obtained from academic journals, conference proceedings, books, dissertations, as well as government and organizational reports.

To understand the state of the literature on mobile phone banking adoption, I conducted a broad literature search. I explored Walden University Library databases and Google Scholar to find relevant journals and articles about the topic of mobile banking. I also explored literature on the theoretical framework and the variables of this study. I searched materials, peer-reviewed articles, journals, books, periodicals, and conference papers on electronic commerce, mobile banking, technology acceptance, online technology, technology adoption, Internet banking, and mobile phone banking adoption.

To conduct the literature search, I used the following keywords and the variations of these key words: *mobile banking*, *online banking*, *mobile phone banking*, *mobile technology*, *m-banking*, *Internet banking*, *m-commerce*, *usability*, *ease of use*, *risk*, *cost*, *and mobile phone banking adoption*. I used the truncation method to broaden the search results in online libraries as this method enabled to retrieve from websites the variant spellings and endings of a word. In addition, I organized my search by subject matter. I searched literature using the key words and variations using databases specialized in business management, information system, and technology: Business Source Complete, Emerald Journals, and SAGE Premier Database. I also explored psychology and social sciences databases to find out peer-reviewed articles, journals, books, and periodicals dealing with quantitative research methods. Finally, I retrieved from dissertations papers and relevant databases quantitative method research studies about the topic of mobile banking.

To ensure thoroughness, the literature review includes citation of 71 relevant sources. The total number of sources that are peer reviewed is 65 (92.8%). In addition, 60 of these articles were published after 2012, meaning 85.7% of sources have been published within five years of the anticipated completion date of this doctoral study (2017). Table 1 includes a summary of the sources cited in the literature review.

Table 1

Sources in the Literature Review

Reference type	Total	Less than 5 years	Greater than 5 years
Research-based peer reviewed journals	64	57	7
Dissertations	1	1	
Books	3		3
Government and organizational reports	2	2	

The literature review follows. I have structured the literature review by first restating the purpose of the study and the hypotheses. Then, I describe the theoretical framework of the study as well as alternative theories used in previous studies. In addition, I discuss the predictor variables (usefulness, ease of use, risk, and cost) and the literature related to the study criterion variable (mobile phone banking adoption). Finally, I conclude the literature review by providing a comprehensive critical analysis and synthesis of the literature pertaining to mobile phone banking.

The purpose of this quantitative correlational study was to examine the extent to which there was a statistical relationship between usefulness, ease of use, cost, risk, and mobile phone banking adoption. The null and alternative hypotheses are below:

Null Hypothesis (H_0): There is no statistically significant relationship between usefulness, ease of use, risk, cost, and mobile phone banking adoption in Burkina Faso.

Alternative Hypothesis (H_1): There is a statistically significant relationship between usefulness, ease of use, risk, cost, and mobile phone banking adoption in Burkina Faso.

Theoretical Framework

Researchers have used many theories to explain user adoption of technology. In past studies, researchers investigating individuals' adoption of mobile phone banking mainly showed mobile banking as a technological innovation (Wentzel, Diatha, & Yadavalli, 2013). I use the technology of acceptance model (Davis, 1989) and IDT (Rogers, 1995) as the theoretical frameworks for this study.

In the late 1980s, Davis (1989) constructed the TAM theory that many researchers use for modeling user acceptance of information systems. Technology acceptance model is a systems theory that indicates how individuals come to accept and use technology. According to Davis, the TAM explains and predicts the behavioral intention of individuals to use information technology in a workplace environment. Davis suggested the constructs of TAM, enables to predict the use of new technologies among users. The TAM introduced perceived usefulness and perceived ease of use that are factors influencing the adoption of information technology among users. Usefulness is the degree to which an individual believes using a system will enhance his or her job performance while ease of use is the degree to which an individual believes using a system will be effortless (Davis, 1989). The TAM shows that perceived usefulness and perceived ease of use are factors influencing individuals to use a system. In the TAM model, individuals who perceive technology as useful and easy to use will accept it more

readily than individuals who do not (Davis, 1989). After a study including 40 participants, Davis concluded perceived usefulness and perceived ease of use determine customers' attitudes to adopt new technologies. Moreover, Davis argued usefulness is more strongly linked to technology usage than is ease of use.

Examples of the adoption of e-commerce and mobile banking using different theoretical models include the application of TAM in mobile banking (Jeong & Yoon, 2013) and integration of perceived trust and TAM in online shopping (Joubert & Van Belle, 2013). Using TAM, researchers have explained and predicted the behavioral intention of people to use information technology in a workplace environment. The success of the TAM resulted in its application beyond the workplace environment as researchers also use the theory to assess mobile commerce and mobile phone banking adoption among consumers. Researchers have demonstrated the validity of the TAM across a wide range of information systems settings (Jeong & Yoon, 2013; Joubert & Van Belle, 2013; Olasina, 2015). Moreover, the factors contributing to the acceptance and adoption of an information system are likely to vary depending on the type of technology, demographics of users, and the nature of information system (Al-Haderi, 2013; Illia & Huang, 2015).

Researchers predominantly use TAM to predict and explain information system and mobile banking adoption (Ali & Ismail, 2014; Tobbin, 2012). Jeong and Yoon (2013) used TAM as the theoretical framework to conduct a study on mobile phone banking adoption in Singapore. They analyzed data from 165 respondents and concluded that perceived ease of use and perceived self-efficacy were related to mobile phone

banking adoption in Singapore. Moreover, Davis (1989) argued perceived usefulness and perceived ease of use are the most important determinants of technology acceptance among people. As many researchers, I used TAM to investigate the extent to which ease of use, usefulness, risk, and cost predict mobile banking adoption in Burkina Faso.

Hanafizadeh, Keating, and Khedmatgozar (2014) conducted a literature review indicating researchers used TAM as a theory in 40% of studies on mobile banking adoption. Moreover, because the TAM does not include economic and demographic and external variables, it might not predict customers' attitudes and behavioral intentions toward mobile banking service (Davis, 1989) effectively. Therefore, many researchers extended TAM with additional constructs such as perceived cost, perceived risk, and compatibility to investigate mobile banking adoption (Hanafizadeh, Behboudi, Abedini, & Jalivand, 2014). Chitungo and Munongo (2013) used the constructs of relative advantage and personal innovativeness to extend TAM while Mathew et al. (2014) used perceived security as a construct to extend TAM.

Rogers (1995) created IDT for explaining how innovations are diffused through some channels among people and society over time. Rogers suggested communication channels, time, innovation, and social system are factors influencing individuals to adopt a new idea. Diffusion involves a specific type of communication that individuals use to influence each other with new ideas. According to Rogers, the diffusion of technological innovation is a communication process. Invention, diffusion, adoption or rejection of new ideas results in social change within a community. However, innovation is an idea or practice that individuals perceive as new.

The aim of IDT theory is to focus on the perceived risk of innovation to be introduced within a social system. According IDT, the factors influencing the adoption of a new technology among people are relative advantage, compatibility, complexity, observability, and trialability. Relative advantage refers to the degree to which an individual perceives an innovation as advantageous. Compatibility is the degree to which individuals believe an innovation is compatible with their beliefs and social norms. Complexity is the degree to which an individual believes an innovation is difficult to perform. Triability is the degree to which an individual believes a customer can use an innovation easily as it is involved less uncertainty. Observability is the degree to which an individual believes other people can see the results of an innovation. When customers see the results of an innovation, they are likely to adopt this innovation. Rogers (1995) classified adopters in five groups: innovators, early adopters, early majority, late majority, and laggards. Depending on the nature of the innovation, the diffusion of a new idea or a new technology is subject to the type of adopters and innovation-decision process. Thus, I used the IDT as a theory for this study that objective was to assess mobile phone banking adoption in Burkina Faso.

Feng-Cheng, Tsu-Wei, and Ju-Ling (2014) used IDT and TAM to conduct a study in Taiwan to investigate consumers' behavioral intention to use Internet banking. Feng-Cheng et al. surveyed 1,000 adult customers who have been using the Internet from one year to five years. The participants of the study were males (57.26%) and females (42.74) living across Taiwan. The results of the study indicated that compatibility and information quality have a positive influence on both perceived usefulness and

customers' behavioral intention to use Internet banking. However, perceived financial cost had a negative effect on customers' behavioral intention to use Internet banking.

Manoranjan and Pradhan (2014) investigated customers' attitudes toward acceptance of mobile banking in India. Using the IDT, Manoranjan and Pradhan assessed the relationships between innovation attributes, mimetic forces, and attitude. Manoranjan and Pradhan concluded that innovation attributes, trialability, and compatibility had a significant influence on consumers' behavioral intention to adopt mobile banking in India. As the objective of IDT is to demonstrate how business leaders introduce technologies in social systems, the theory does not show how attitudes form and ultimately lead to acceptance or rejection of a specific technology (Marangunic & Granic, 2015). Moreover, researchers use IDT to extend TAM as theoretical framework to investigate mobile banking adoption among customers (Engwanda, 2014). Extending TAM with IDT, Engwanda surveyed a random sample of 398 participants living in the United States to collect data by e-mail. The results indicated perceived compatibility, perceived credibility, and perceived costs were the significant predictors of mobile banking adoption in the United States.

Alternative Theories of Mobile Phone Banking Adoption

Technology acceptance model2 (TAM2). Although TAM2 was not the theory I used for this study, many researchers have used TAM2 to investigate customers' behavioral intention to adopt mobile phone banking. Venkatesh and Davis (2000) extended TAM to create TAM2. Venkatesh and Davis examined perceived usefulness and usage intensions as social influence and cognitive instrumental processes. According

to Venkatesh and Davis, both social influence processes and cognitive instrumental processes significantly influenced customers using mobile banking services. TAM2 indicates that job relevance has a positive effect on perceived usefulness. In addition, output quality is another determinant of perceived usefulness as output quality refers to a customer's perception about how well the system is enabling users to perform mobile banking tasks (Venkatesh & Davis, 2000). TAM2 also indicates result demonstrability has a positive effect on perceived usefulness. Thus, Venkatesh and Davis added more constructs to make the original version of TAM more comprehensive. Over time, researchers have used TAM2 to investigate mobile banking adoption (Illia & Huang, 2015). Illia and Huang analyzed the information system literature on mobile banking adoption along with relevant theories. Illia and Huang found that TAM2 was a conceptual model that could have a potentially greater explanation power. This model emphasizes the role of subjective norms, technological readiness, trust, and perceived critical mass of users.

The unified theory of acceptance and use of technology. While I did not use the unified theory of acceptance and use of technology for the propose study, many researchers have used this theory to investigate customers' behavioral intention to adopt mobile phone banking. Venkatesh et al. (2003) developed the unified theory of acceptance and use of technology. The theory indicates three constructs are the main determinants of intention to use an information technology such as mobile banking: performance expectancy, effort expectancy, and social influence. According to

Venkatesh et al. define the constructs include in the unified theory of acceptance and use of technology as follows:

- Performance expectancy: the degree to which the customer expects that using a technology will improve his or her job performance. This construct consists of: perceived usefulness, extrinsic motivation, relative advantage, and outcome expectations.
- Effort expectancy: the degree to which customers perceive the ease of use of a system.
- Social influence: the degree to which a customer considers important that others believe he or she may use a new technology.

Venkatesh et al. (2008) also argued age and experience of the individuals influence their perception about the facilitating conditions of the technology. They define facilitating conditions as the degree to which a customer believes that an effective organizational and technical system exists to enable use of the technology. Many researchers have used unified theory of acceptance and use of technology to investigate mobile banking adoption in Saudi Arabia, India, and Kenya (Ezzi, 2014; Micheni, Lule, & Muketha, 2013; Parijat, 2016). The results indicated that facilitating conditions and social influence are factors influencing customers' behavioral intention to use mobile banking services in Saudi Arabia, India, and Kenya.

Bass (1969) created the bass diffusion model that consists of a differential equation describing the process of adoption of new products among customers. Bass described how customers adopt new products and services. The process of adoption is an

interaction between present customers (who already use the product or the service) and potential customers (Bass, 1969).

Using the bass diffusion model, Bass (1969) classified consumers as innovators or as imitators with a timing of adoption depending on their degree of innovativeness and the degree of imitation among adopters. Lee, Trimi, and Kim (2013) conducted a study using the bass diffusion model to investigate m-banking adoption in the United States and Korea. The results of the study of Lee et al. showed that because of cultural differentiations, customers imitate early adopters of m-banking in Korea while customers are sensitive to innovation in the United States. Depending on their cultures, adopters and users of m-banking interact differently.

Social cognitive theory. While I did not use the social cognitive theory for this study, many researchers have used this theory to investigate customers' behavioral intention to adopt mobile phone banking. Contrary to the TAM, and the innovation diffusion theory showing there are unidirectional causal relationships among variables, the social cognitive theory (Bandura, 1986) indicates an interaction exists between environmental factors, personal factors, and customers' behaviors. The extent to which an individual understands a technology influences his or her behavior towards this technology. In addition, the successful interactions with the technology likely influence customers' cognitive perceptions (Bandura, 1986). Self-efficacy and outcome expectations are main factors influencing customers' behavioral intention to adopt a technology. The social cognitive theory indicates that self-efficacy influences both personal and performance-related outcome expectations (Bandura, 1986).

Independent Variables of the Study

Ease of use. Ease of use is a predictor variable for this study. Davis (1989) defined ease of use as the extent to which a consumer believes that using a given technology is effortless. Using ease of use variable, researchers seek to measure user understanding of ease of use and ease of learning (Ezzi, 2014). In past studies, researchers have assessed in many countries the relationship between ease of use and customer intention to use mobile banking (Olasina, 2015; Wentzel et al., 2013). Olasina (2015) conducted a study related to mobile banking adoption among faculties and students in Nigeria. Olasina administrated a questionnaire to 500 participants (150 faculty staff and 350 students) from the University of Ilorin, Nigeria. The results of Olasina's study indicated the participants consider perceived ease of use as a relevant factor that influences their intention to use mobile banking. Hanudin et al.'s findings on mobile banking acceptance in Malaysia included Malaysian banks customers selected randomly. Hanudin et al.'s study participants stated that perceived ease of use was an important determinant of their behavioral intention to accept to use mobile banking. In South Africa, Wentzel et al.'s study results indicated perceived ease of use is a determinant that poor people consider before using mobile phone banking. Wentzel et al. collected data using face-to-face interviews with low-income participants living in South Africa and they founded that consumers are willing to use or buy a technology or a service when they considered that they can easily use the product or the service.

Ease of use is an important construct as it may influence customer intention to use a given technology (Maroofi et al., 2013). Moreover, customers' perceptions toward ease

of use depend on the task they aim to perform using a specific technology (Wang & Shan, 2013). Therefore, when advertising or implementing mobile banking, marketers might find it beneficial to highlight the ease of use of mobile banking technology for customers (transfer money, pay invoices) rather than present it in a task-independent manner. Researchers could conceptualize the construct of ease of use in relation with the tasks customers perform when using a technology (Wang & Shan, 2013).

Lee et al. (2013) conducted a study in the Republic of Korea to assess usage intention toward mobile financial services. The population of the study consisted of 240 customers using Internet banking services of local banks. The sample included 50.4% of respondents aged from 20 to 29 and 55.8% of the respondents had a university degree or higher level of education. The results of Lee et al.'s study indicated that connectivity and personal innovativeness have a positive impact on ease of use toward mobile financial services. Connectivity refers to the quality and the reliability of the network while personal innovativeness refers to customer acceptance of information technology, Internet shopping and web broadcasting.

Parijat (2016) conducted a study in India and indicated personal innovativeness does not have a significant impact on customers' understanding of ease of use. Parijat conducted a nation-wide study involving 196 respondents using mobile phone for more than two years. To assess intention to adopt mobile money in India, Parijat tested 11 hypotheses using regression. Parijat demonstrated that there was a correlation between ease of use and intention to use mobile-based transfer payments.

Results of many studies in Africa and Asia indicated that ease of use is a construct to consider when researchers aim to investigate mobile phone banking adoption (Parijat, 2016; Wentzel et al, 2013). In previous studies on mobile phone banking adoption, authors have posed that a relationship might exist between ease of use and usefulness (Davis et al., 1989; Olasina, 2015). In early 2010, marketers have introduced mobile phone banking services in Burkina Faso (ARCEP, 2013). Marketers should consider the importance of ease of use in their tentative to expand the adoption of mobile phone banking among customers as the technology is in its infancy in West Africa (Olasina, 2015).

Usefulness. Usefulness is a predictor variable for this study. Usefulness is the degree to which a person believes that using a system would enhance his or her job performance (Davis et al., 1989). Researchers use the construct of usefulness to suggest that using computers in the workplace would increase user satisfaction.

Researchers have indicated that usefulness is a fundamental determinant of TAM. Jeong & Yoon (2013) conducted a literature review showing that many researchers who conducted inquiries on mobile phone banking adoption have included the construct of usefulness as variable of their studies. Ali and Ismail (2014) analyzed the implementation and the adoption of mobile money transfer among Somali students. Ali and Ismail collected data from students of the University of Somalia. The yielded results showed that perceived usefulness was one of the factors associated to the adoption of mobile money transfer technology among users.

Parijat (2016) conducted a study in India corroborating that the construct of usefulness affects usage intention of mobile money services. Among the 11 variables of the study, the results of Parijat's study indicated that usefulness is the most important predictor of mobile money adoption in India.

Parvin (2013) conducted a study describing how banks operate in Bangladesh to provide mobile banking services to poor. Parvin argued that mobile banking is part of the new environment of bank industry in Bangladesh. Many banks have developed innovative products to increase the number of mobile banking users, as customers are sensitive to usefulness and innovation (Parvin, 2013). Furthermore, Manoranjan & Pradhan (2014) conducted a study in India showing that customers are more sensitive to innovation attributes and compatibility than usefulness when they make decision to adopt mobile banking. Meanwhile the authors suggested that a positive causality exists between usefulness and the development of e-commerce.

Wentzel, Diatha, and Yadavalli (2013) conducted a study that indicated poor adopt mobile phone banking in South Africa because the technology enables them to get access easily to financial services. Wentzel et al. suggested that usefulness was one of the constructs that might influence poor people to adopt mobile banking service in South Africa. Furthermore, Olasina (2015), Priya and Raj (2015) used the construct of usefulness as predictor variable to assess mobile phone banking adoption both in developed countries and developing countries. Many people use mobile phone banking in Bangladesh and South Africa because they found the technology useful in their daily

life (Parvin, 2013; Wentzel et al., 2013). Meanwhile, in India customers refer to innovation and compatibility to adopt mobile banking (Priya & Raj, 2015).

Cost. Cost is a predictor variable for this study. Cost refers to the extent to which a customer feels that using a mobile phone to perform financial transactions costs money (Mathew et al., 2014). Cost may include bank fees, telecommunication costs, device costs, and cell phone costs. Many researchers suggested technology costs could affect the adoption of mobile banking (Nur et al, 2014).

Thakur (2014) conducted a survey in India to examine customer intention to use mobile banking. Thakur's study findings indicated perceived financial cost was a factor that influences customers to adopt mobile banking services. Furthermore, Nur, Gang, Cui, and Sajal (2014) conducted a study in Bangladesh to assess mobile banking adoption. Nur et al. used a survey to collect data from 555 respondents drawn from the population of mobile phone users in Rangpur, Bangladesh. Nur et al. drew the same conclusion than Thakur, as the results of the structural equation model indicated cost is a construct that influences people behavioral intention to adopt mobile banking in Bangladesh.

Jeong and Yoon (2013) investigated empirically consumer acceptance of mobile banking services in Singapore. Jeong and Yoon used a survey to collect data from 165 respondents. The results of the study indicated that except for perceived financial cost, all the TAM constructs had a positive impact towards mobile banking acceptance.

Financial cost is a factor influencing customers' adoption of mobile banking services (Nur et al, 2014). As a result, customers have formed a negative behavioral

pattern towards mobile phone banking (Jeong and Yoon, 2013). In addition, the results of many studies indicated perceived financial cost is a construct that influences customers intention to use mobile banking more than perceived usefulness and perceived ease of use (Jeong and Yoon, 2013; Nur et al., 2014). Therefore, company leaders and marketers should consider the importance of cost in their attempt to expand the adoption and use of mobile phone banking in Burkina Faso.

Risk. Risk is a predictor variable for this study. Risk is the extent to which a customer feels he or she is at risk regarding his or her decision to use mobile phone banking service (Mathew et al., 2014). According to Thakur and Srivastava (2014), risk is consumers' perception rather than the characteristic of a product. Many researchers consider risk as one of the biggest concerns in adoption and use of mobile phone banking services (Chen, 2013, Jinbaek et al., 2013; Mathew et al., 2014). Despite the success of mobile phone, researchers believe that mobile phone banking customers are experiencing many types of risks (Agu, Simon, & Onwuka, 2016). The risk of disclosing personal or sensitive information to other unauthorized parties that may use it inappropriately affects mobile banking adoption (Parvin, 2013).

Chen (2013) conducted a study to assess the relationship between risk, brand awareness, brand image of mobile banking providers, and mobile banking adoption in Taiwan. Using a survey questionnaire, Chen collected data from 610 respondents who were customers of one of the biggest retailer bank in Taipei, Taiwan (56% male and 44% female). The results of Chen's study indicated risk and brand image influence customers' attitude towards mobile banking services in Taiwan. For example, mobile phones have

limited battery life that may break wireless connection and therefore limit the use of mobile banking service. According to Laukkanen (2016), risk is inherent to innovations such as mobile phone banking.

JinBaek, Sungmin, and Hoon (2013) investigated the factors affecting customer intention to use smartphone banking in Korea. JinBaek et al. collected data from 271 online respondents to conduct an empirical study. Using a structural equation modeling to analyze data and test the research model, JinBaek et al. concluded that perceived risk has an impact on customers' intention to adopt smartphone banking in Korea.

Mathew et al. (2014) conducted a study to analyze perceptions and intentions of customers towards mobile banking adoption. Using a survey, Mathew et al. collected data from 230 respondents in Kerala, India. The results of Mathew et al.'s study indicated both users and non-users consider risk when using or adopting mobile banking. Mathew et al. used 12 constructs to investigate mobile banking adoption. Fifty percent of the constructs of the study included risk: social risk, financial risk, performance risk, time risk, security risk, and privacy risk. The results of Mathew et al.'s study indicated that customers were more sensitive to usefulness than risk when they intend to use mobile banking. The objective of this study is to examine the extent to which mobile phone customers' understanding of mobile phone banking usefulness, ease of use, cost, and risk, are predictors of their behavorial intention to adopt mobile phone banking.

Factors Influencing Mobile Phone Banking Adoption

Mobile phone banking adoption is the dependent variable of this study. According to Laukkanen (2016), mobile phone banking refers to the use of a mobile

phone or a tablet to access banking services. A thorough literature review indicated researchers have investigated over time factors influencing mobile phone banking adoption.

Trust and mobile phone banking adoption. While trust was not a predictor variable for this study, researchers have examined the variable and found trust affects customers' intention to adopt mobile phone banking (Joubert & Van Belle, 2013). Trust in mobile phone banking means a customer has enough confidence regarding the ability, integrity, and benevolence of a bank providing mobile banking services (Wang & Shan, 2013). Thus, trust is a factor influencing positively a customer to reduce the extent to which he or she perceives risk on mobile banking, which could result in the use of a cell phone terminal to perform bank transactions at any time and at anywhere (Wang & Shan, 2013). Customers need to build trust to use mobile banking as the technology involves uncertainty and risk due to the fact mobile banking system is exclusively under the control of mobile banking technology providers (Joubert & Van Belle, 2013). Customers with a high level of trust perform online purchases, while a lack of trust is a barrier to Internet commerce (Joubert & Van Belle, 2013).

According to Kabir (2013), trust consists of three dimensions: ability, integrity, and benevolence. Ability refers to a customer's perception about the competency of mobile phone banking provider to deliver the expected service. Integrity refers to a customer's perception that banking industry managers will provide mobile banking services fairly and honestly. Benevolence refers to the extent to which an individual believes that leaders of a mobile phone banking company demonstrate receptivity and

empathy for customers (Kabir, 2013). Moreover, Joubert and Van Belle (2013) examined the construct of trust and found customers' confidence in technology such as mobile banking depends on the following factors: disposition to trust, institution based trust, system trust, and vendor trust. The factors customers consider as constructs of trust are outline as follows

- Disposition to trust: This factor refers to the willingness of a customer to depend on a vendor. Before using or adopting mobile banking services, customers might trust mobile banking provider
- Institution-based trust: This factor refers to a customer's trust in institutions, and the legal and regulatory framework in place. The legal provisions about mobile banking industry influence customers' trust toward the technology. Thus, regulators can foster customers trust on mobile banking when they regulate the industry of mobile banking effectively.
- System trust: This factor refers to the security, reliability, and performance of the technology. Customers trust a secure, reliable, and effective technology system
- Vendor trust that refers to the extent to which a customer believes the vendor will effectively fulfill the transactional obligations in risky situations. Despites the difference in the definition and understanding of trust, both Kabir (2013), Joubert and Van Belle (2013), and Shaw (2014) indicated the construct of trust affects a customer's behavioral intention to

use mobile banking services respectively in Bangladesh; South Africa, and North America.

Omwansa, Lule, and Waema (2015) conducted a study to examine low-income customers' behavioral intention to adopt mobile financial services in Kenya. Using a survey, Omwansa et al. collected data from 283 respondents living in Nairobi, Kenya. The results of Omwansa et al.'s quantitative study indicated trust and risk were significant determinants of the use of mobile money transfer in Kenya. The results of this study also indicated that trust moderates risk in the adoption of mobile banking services among customers.

Maroofi, Kahrarian, and Dehghani (2013) conducted a study in Iran using a survey to collect data from 210 respondents in Kermansha province. All the participants of the study were customers of Bellat Bank in Iran who had not used a mobile banking service yet. Maroofi et al. used a structural equation model to examine the relationship between initial trust and the intention to use mobile banking. The results of Maroofi et al.'s study indicated initial trust influences customers' behavioral intention to use mobile banking service. Thus, trust may influence customers' perception of mobile banking services in Burkina Faso.

Credibility and mobile phone banking adoption. While credibility was not a predictor variable of this study, researchers have examined the variable and found credibility affects customers' behavioral intention to adopt mobile phone banking. Credibility is the extent to which a customer feels that using an information system will not result in a security or privacy concern (Wang et al., 2013). Abdulkadir et al. (2013)

argued security entails protecting the mobile banking system from unauthorized access, while privacy involves the protection of mobile banking user personal information from abusive intrusion. Thus, credibility may affect consumers' intention to adopt mobile phone banking.

Abdulkadir et al. (2013) investigated mobile banking adoption in Malaysia. Abdulkadir et al. surveyed 125 participants (55.2% of males and 44.8% of females) from various settings and they analyzed data using a multiple regression test. The results of Abdulkadir et al.'s study indicated perceived credibility was not the most significant factor affecting mobile banking adoption in Malaysia. Moreover, usefulness was the main predictor of mobile banking adoption in Malaysia.

Ramlugun and Issuree (2014) conducted a study to examine factors determining mobile banking adoption in Mauritius. Using a survey and an online platform, Ramlugun and Issuree collected data from 347 participants living across the country. The findings were consistent with those of Ezzi (2014), which indicated credibility was a factor impacting behavioral intention to use mobile banking services. As security and privacy issues are the important dimensions of credibility, business leaders should address these issues to increase the likelihood of mobile phone banking adoption among customers (Abdulkadir et al, 2013; Ezzi, 2014). According to Ezzi (2014), there is a correlation between credibility and trust in mobile banking industry.

Facilitating conditions and mobile phone banking adoption. While facilitating conditions was not a predictor variable of this study, researchers have examined this variable and found facilitating conditions was a construct affecting customers' behavioral

intention to adopt mobile phone banking. Facilitating conditions is the extent to which a customer believes that mobile banking leaders implement a reliable organizational and technical infrastructure to support financial transactions (Micheni et al., 2013). In the context of mobile banking, facilitating conditions refers to easy access to the agent network, continuity of the network coverage, and effective customer support services (Micheni et al., 2013). Thus, facilitating conditions affects customers' perception towards resources and supports they can benefit when using mobile banking services (Tossy, 2014).

Micheni et al. (2013) conducted a study to examine the effects of transaction costs and facilitating conditions on customers' behavioral intention to adopt mobile money in Kenya. Using a survey, Micheni et al. collected data from poor mobile phone users living in the localities of Kawangware, Kangemi, Mulango Kubwa, Kayole and Kibera in Kenya. The results of Micheni et al.'s study indicated facilitating conditions strongly influenced mobile money adoption, while transaction costs do not influence customers' behavior to adopt mobile money. Therefore, marketers can enhance the development of mobile money industry if they invest in network coverage, technology, and assistance to customers (Micheni et al., 2013). Facilitating conditions is key to attract and retain customers as mobile banking providers can increase the number of users when they create a reliable mobile banking system. Conversely, Tossy's (2014) findings indicated that facilitating conditions did not influence the adoption of mobile payment system in Tanzania. Tossy surveyed 182 participants from students living in main cities of Tanzania. The findings of Tossy's study indicated trust, social influence, perceived risk

and perceived effectiveness had significant impact on customers' intention to use mobile payment system.

Social influence and mobile phone banking adoption. While social influence was not a predictor variable of this study, researchers have examined this variable and found social influence affects customers' behavioral intention to adopt mobile phone banking. Venkatesh et al. (2008) defined social influence as the level to which a customer perceives that crucial individuals believe he or she should exercise mobile banking technology. Social influence consists of two factors: subjective norm and critical mass. According to Kazi and Mannan (2013), subjective norm and critical mass are factors influencing customers' perception and behavior towards mobile banking services. Customers who lack knowledge about technology rely on individuals' beliefs or behavior before using mobile banking services (Illia & Huang, 2015). In addition, customers who use mobile banking influence other individuals in their social circle. When mobile banking users increase in an individual's social network, the individual faced more social pressure and more information about the technology, and therefore he or she is likely to use mobile banking services (Illia et al., 2015).

Kazi and Mannan (2013) surveyed 372 participants composed of low-income population living in Karachi and Hyderabad, Pakistan to investigate mobile banking adoption. The results of this quantitative study indicated social influence, perceived risk, perceived usefulness, and perceived ease of use were the factors influencing mobile banking adoption. Meanwhile social influence was the most significant predictor of customers' intention to use mobile banking services. The results of Kazi and Mannan's

study were consistent with the results of Illia et al. (2015), indicating that social influence composed of subjective norm and critical mass is the predictor of mobile banking adoption. Subjective norm refers to a customer's social pressure to use or not mobile banking, while critical mass refers to a customer's perception of whether the number of mobile banking users attains the critical mass threshold (Illia & al., 2015). Many researchers have indicated social influence has a significant impact on people's intention to use mobile banking services (Illia & al., 2015).

Self-efficacy and mobile phone banking adoption. While self-efficacy was not a predictor variable of this study, researchers have examined this variable and found self-efficacy is a factor influencing customers' behavioral intention to adopt mobile phone banking. Self-efficacy refers to the extent to which a customer believes he or she can perform a mobile banking task (Illia et al., 2015). Bandura (1986) built upon the cognitive learning theory to develop the self-efficacy theory. Self-efficacy consists of two concepts: efficacy expectations and response outcome expectations. According to Ezzi (2014), self-efficacy predicts customers' behavior toward technology or service involving complex decision-making. For example, the use of mobile banking services requires skillful performance (Ezzi, 2014).

Al-Haderi (2013) surveyed 357 participants to investigate the effect of self-efficacy on the acceptance of information technology in the Yemen public sector. The findings of Al-Haderi's study indicated self-efficacy influences customers' perception of ease of use of information technology. Thus, self-efficacy has a positive impact on using computer and the Internet. Al-Haderi's findings were consistent with previous results

where researchers examined the influence of self-efficacy on customers' behavioral intention to adopt mobile banking technology (Illia et al., 2015; Ezzi, 2014).

Dependent Variable of the Study

The criterion variable of this study is mobile phone banking adoption. Regarding the industry of mobile phone banking, a customer behavioral intention to adopt relates to the deliberate intention of an individual to adopt mobile phone banking services (Hanafizadeh, Keating et al., 2013). According to Hanafizadeh, Keating et al. (2013), assessing mobile phone banking adoption consist of identifying and describing the characteristics and attitudes of mobile phone banking adopters, barriers to mobile banking adoption, and factors that drive mobile banking adoption.

In a literature review, Dennehy and Sammon (2015) examined mobile banking adoption, considering drivers and barriers affecting customers' behavioral intention to use mobile phone banking. The drivers consist of offering benefit to customers, merchants, mobile operators, and financial institutions. They argued drivers include customers' experience and ease-of-use of mobile banking. Conversely, Micheni et al. (2013) found complexity, compatibility, relative advantage, observability, and trialability were the significant drivers affecting customer decision making in mobile banking adoption. Matilla indicated security and confidentiality of information were the main barriers to a successful implementation of mobile banking. I examined in this study the relationship between usefulness, ease of use, cost, risk, and mobile phone banking adoption in Burkina Faso.

Researchers try to understand how factors affecting mobile banking adoption interact with customers' behavioral intention to adopt the technology. Researchers attempt to explain and predict the phenomenon of mobile phone banking adoption using models and theories. The dominant theories researchers used to investigate customers' behavioral intention to adopt mobile phone banking are:

- Theory of planned behavior: Ajzen crafted this theory in 1985.
- Social cognitive theory: Bandura developed this theory in 1986.

The theory of reasoned action indicates an individual can control the outcomes of his or her behavior. Ajzen (1985) suggested the control of the outcomes of behavior explains the relation between behavioral intentions and an individual actual behavior. The social cognitive theory (Bandura, 1986) provided a conceptual framework for understanding and predicting human behavior. Bandura defined human behavior as the result of interactions among personal factors, customer's behavior, and the society. The interaction between the individual and his or her behavior results in the influence of the individual's beliefs and actions. The social cognitive theory is useful to understand and predict individuals' behavioral intentions in their societies (Bandura, 1986).

Many researchers used or adapted the above theories to study the adoption of new technologies such as mobile banking (Rogers, 1995; Davis, 1989). The most important theories are:

- Diffusion of innovation theory: Rogers created this theory in 1995.
- Technology acceptance model: Davis crafted this theory in 1989.

- Decomposed theory of planned behavior: Taylor and Todd developed this theory in 1995.
- Extended technology acceptance model: Venkatesh and Davis created this theory in 2000.
- Unified theory of user acceptance of technology: Venkatesh et al. developed this theory in 2003.

The author of the diffusion of innovation theory considers innovation adoption as a social construct that evolves among people over time (Rogers, 1995). He argued individuals possess different degrees of willingness to adopt an innovation such as mobile phone banking. Rogers identified five categories of innovation adopters ranging from early adopters to late adopters. The relative advantage of a new technology, the compatibility of the innovation with existing systems or previous technologies, and the complexity of an innovation influence the adoption of a new technology such as mobile phone banking.

The technology acceptance model is an adaptation of the theory of reasoned action for the field of information system (Davis, 1989). According to Davis, perceived usefulness and perceived ease of use determine a customer's intention to use an information system. In addition, Davis argued perceived ease of use impacts perceived usefulness in the field of information system. Many researchers have used TAM to investigate customers' intention to use mobile banking (Cudjoe, Anim, & Nyanyofio, 2015; Hanafizadeh, Keating et al., 2014; Tossy, 2014). Hanafizadeh, Keating et al. (2014) conducted a literature review indicating many researchers rely on TAM to

investigate mobile phone banking adoption in Africa, in Europe, in Asia, and in USA. I used TAM to examine customers' behavioral intention to adopt mobile phone banking in Burkina Faso. Meanwhile, the decomposed theory of planned behavior differs from TAM as this theory considers perceived usefulness and ease of use as mediating behavioral intentions (Taylor and Todd, 1995). Researchers used the decomposed theory of planned behavior to investigate mobile banking adoption in China (Yang, Pang, Liu, & Tarn, 2015) and Yemen (Ali Saleh & Khalil, 2015).

Wentzel (2013) used an extended TAM to investigate technology-enabled financial service adoption in South Africa. Wentzel extended TAM with five constructs (trust, social norm, task, self-efficacy, and hedonistic). The results of Wentzel's study indicated the extended TAM allows a better understanding of customers' intention to adopt mobile financial services in South Africa. Many researchers have also used the extended TAM to investigate mobile banking adoption (Abdulkadir, 2013; Al-Haderi, 2013; Farhana, 2014). Thus, I used extend TAM to examine customers' behavioral intention to adopt mobile phone banking in Burkina Faso.

The objective of unified theory of user acceptance of technology is to explain customers' intention to use a technology and customer future behavior (Venkatesh, 2003). According to Venkatesh, the constructs of performance expectancy, effort expectancy, social influence, and facilitating conditions are determinants factors of customer's usage intention. Moreover, gender, age, experience, and voluntariness of use are variables that moderate the impact of the four key constructs on usage intention and behavior (Venkatesh, 2003). Researchers have extended TAM with constructs from

unified theory of user acceptance of technology to investigate mobile banking adoption in Saudi Arabia, Pakistan, and China (Ezzi, 2014; Kazi & Mannan, 2013; Wang & Shan, 2013).

Due to differences in laws, payment technology infrastructure, and regulations in every country, researchers use the contingency theory of technology adoption to examine the impact of cultural, social, and economic factors on consumer and merchant adoption of mobile banking (Dennehy & Sammon, 2015). For example, the M-Pesa mobile payment system in Kenya is based on SMS technology while other mobile payment systems are based on Quick Respond (QR) code or Near Field Communication (NFC) technology (Dennehy & Sammon, 2015). Customers' can use SMS technology with all types of cell phones to perform mobile banking while customers need a Smart phone to use QR code or NFC technology to perform mobile banking. Marketers in developing countries provide SMS technology to customers, as this technology is cheaper than QR code or NFC technology. To improve mobile phone banking adoption in Burkina Faso, marketers may consider individuals' incomes when choosing a technology for mobile banking.

Researchers classified past studies on mobile banking adoption under three categories: (a) legal, regulatory and standardization; (b) technology, security and payment architectures; and (c) social, cultural, and economic (Dennhy & Sammon, 2015). The results of past studies on mobile banking indicated that business leaders have not met many expectations regarding customers' satisfaction about mobile banking (Omwansa et, 2015). Nevertheless, technological progress has expanded banking opportunities for

people in modern areas which result in the fact that mobile banking is no longer an advantage but a necessity for people living in developed countries (Dennhy & Sammon, 2015). For consumers in developed countries, mobile banking is a complementary service financial institution offer in addition to ATMs and Internet banking to allow customers to manage financial transactions. Thus, customers consider convenience, usefulness, and ease of use before adopting mobile banking services (Omwansa et al., 2015).

Customers use mobile phone banking for small payments in Japan and USA (Jinbaek et al., 2013). According to Adapa and Cooksey (2013), value for money and the technology are factors predicting customers' continuous use of Internet banking. Moreover, consumers in the developing countries consider accessibility and affordability due to weak network coverage, poor quality connection, and costs (Boor, Oliveira, & Veloso, 2014) before adopting mobile banking services. Even though, mobile banking presents much positive potential, the service has some risks such as security risks, implementation risk, and maintenance risks (Isaac, 2014; Zanoon & Gharaibeh, 2013) in both developed and developing countries. Dennhy and Sammon (2015) indicated that 55% of the most cited peer reviewed articles on mobile banking adoption are related to technology, security, and architectural issues.

Researchers have also investigated mobile banking adoption from the perspective of customers' perceptions about the service (Ezzi, 2014; Illia & Huang, 2015). Jeong and Young's study (2013) indicated some adoption factors are common to all studies: Ease of use, usefulness, and risk. Moreover, some adoption factors are specific to a country or a

specific region: social norms, cost, credibility, and facilitating conditions. Customers' adoption of mobile banking is context-dependent as the significance of factors affecting mobile banking adoption varies across countries (Kazi & Mannan, 2013; Omwansa et al., 2015). The objective of this study was to examine the extent to which usefulness, ease of use, cost, and risk are predictors of mobile phone banking adoption in Burkina Faso.

Evolution of Mobile Phone Banking

The Internet development since early 1990 has deeply impacted the financial services sector which results in a shift in the way marketers deliver banking services. This development includes internet banking, mobile phone banking, and mobile banking features that people use to complete their financial transactions in a cost-effective and efficient manner at any time of the day (Hanafizadeh, Behoudi et al., 2014).

Internet banking. The rapid diffusion of the Internet has changed the delivery channels that the leaders of financial services use to provide banking services. Internet banking was the first technology banks managers use to allow customers to perform banking transactions online (Al-Ajam & Nor, 2013). The Internet banking technology preceded mobile banking. The marketing of the Internet in early 1990 results in the development of e-commerce as well as Internet banking because of the low cost and easy connectivity of the World Wide Web (Al-Ajam & Nor, 2013). Many financial institutions' managers have used Internet banking as a distribution channel for the bank's services (Couto, Tiago, & Tiago, 2013). Ease of transactions, avoidance of restrictive branch operating hours, result in the fact that Internet banking is cheaper than traditional

banking. At the same time, banks' managers could provide lower cost financial services, and enhance customer satisfaction (Couto et al., 2013; Lin, Yang, & Peraro, 2016).

Banks' leaders invest in Internet banking to reduce financial transactions costs and provide accurate information to customers timely (Hanafizadeh, Keating et al., 2014). Stanford Federal Credit Union developed and introduced the first Internet banking service in the United States (Soltysiak & Suraj, 2014). In 1995, Wells Fargo Bank became the first bank to provide Internet banking to its customers (Soltysiak, & Suraj, 2014). Internet banking deeply impacted the banking industry because banks' managers use this technology to operate effectively by reaching far more customers at lower cost. An important factor that influences customer adoption and use of Internet Banking is their attitude toward the technology. By identifying the expectations and needs of customers, and understanding their motivations to adopt Internet banking, banks' managers and policy-makers can develop strategies to improve the adoption of Internet banking technology.

Mobile phone banking. The concept of mobile phone banking refers to the use of a mobile phone or a tablet to access banking services (Laukkanen, 2016). Since early 2000, the evolution of Internet and mobile phone technology has revolutionized the banking industry (Wentzel et al., 2013). The expanded use of smartphones has increased demand for mobile banking services which result in the increase of the number of banks, microfinance institutions, and software companies providing innovative mobile banking solutions. Financial institutions' managers use mobile phone banking services to extend

their customer reach, improve customer retention, and enhance operational efficiency (Shakir & Noor, 2013).

Mobile banking is gaining in popularity as people who do not have a financial institution account use the technology to get access to financial services (Hanafizadeh, Keating et al., 2014). Customers who are familiar with Internet banking are also potential users of mobile banking, so they are familiar with both technologies. Internet banking customers can adopt mobile banking easily (Laukkanen, 2016).

Despite the tremendous benefits of mobile banking, customers are reluctant to use mobile phones or tablets to perform financial transactions or to get access to their bank account information (Omwansa et al., 2015). Compared to the Internet, mobile banking service penetration rate is still low (Couto et al., 2013; Hanafizadeh, Keating et al., 2014), and many consumers have not adopted this technology yet (Laukkanen, 2016). In Burkina Faso, only 3.1% of customers use mobile banking service (World Bank, 2015).

In 1990s, financial institutions managers launched mobile phone banking using Short Messaging Service (SMS), Wireless Access Protocol (WAP) or General Packet Radio Service (GPRS) enabled wireless mobile device web browsing (Hanafizadeh, Behoudi et al., 2014). Mobile banking providers used SMS application as the first applications of mobile phone allowing customers to perform banking transactions (Olasina, 2015).

Outstanding progress in computer and mobile technologies results in an increase of customers who use Smartphones to complete real-time financial transactions. Mobile banking implementation results in a shift in banking operations as mobile banking

technology provides a new marketing channel for banking services (Laukkanen, 2016). Moreover, many consumers still consider mobile banking as an emerging technology that they do not widely used yet as they are reluctant to put trust into a mobile phone to conduct banking transactions. Thus, investigating consumers' behavioral intention to adopt mobile phone banking technology has been a major topic in academic research (Omwansa et al., 2015).

As banking is becoming increasingly online and mobile, Internet and mobile banking technologies provide a rich environment for study. Many researchers have studied the factors affecting the rejection or acceptance of mobile banking (Hanafizadeh, Behoudi et al., 2014). The results of previous studies indicated most consumers are still reluctant to adopt mobile banking (Couto et al., 2013; Hanafizadeh, Behoudi et al., 2014; Laukkanen, 2016). Thus, empirical investigations are key to understand the factors affecting mobile banking adoption among people.

Mobile banking features. Customers use mobile banking to connect to banking services remotely and quickly at any time using mobile devices (Laukkanen, 2016). Thus, mobile banking enables customers to perform banking transactions 24 hours a day using their mobile phone without accessing to a bricks and mortar bank (Illia & Huang, 2015). Compared to traditional financial channels (ATMs, Internet banking) mobile banking added ubiquity, mobility, and flexibility to banking operations (Reed, 2014).

With mobile banking technology, customers have access to (a) check balance, (b) view statement, (c) bill payment, (d) personal financial management, (e) access to account information, (f) funds transfer (Crowe, Tavilla, & McGuire, 2015). Federal

Reserve Bank of Boston indicated the top four reasons driving financial institutions to offer mobile banking services are (a) recruit new customers, (b) build customers' loyalty, (c) competitiveness, (d) use technology to enhance marketing performance (Crowe, Tavilla, & McGuire, 2015). Financial institutions' managers offer mobile banking services as a strategy to avoid losing existing customers. This study may help mobile banking providers to create effective strategies to increase mobile phone banking users in Burkina Faso.

Transition

Section 1 included a description of the background of the study, problem statement, purpose statement, nature of the study, research question, hypotheses, theoretical framework, operational definitions, assumptions, delimitations, limitations, significance of the study. The literature review concluded the section with details about the topics of mobile phone banking adoption. Section 2 included a comprehensive summary of the purpose of the study, role of the researcher, participants of the study, population and sampling, and ethical research. I described the research methods and designs with descriptions of approaches used and the rationale for selecting the specific approaches. Section 2 also included explanations of data collection instruments and techniques. Section 2 concluded with thorough descriptions of the data analysis procedures and the reliability and validity of the survey instruments and statistical procedures. Section 3 covered the application to professional practice, offer an overview of the study, present the findings, and offer recommendations for action, social change, and further research.

Section 2: The Project

Section 2 includes an overview of the project, the strategies used to collect and analyze data, and elements such as the purpose of the study, role of the researcher, participants, research method and design, population and sampling, concerns related to ethical research, and reliability and validity. In Section 1, I provided information on the study and detailed information on previous research surrounding mobile phone banking adoption. In Section 2, I expand on the study and answer some of the questions identified in Section 1. Section 2 also includes detailed information on the overall project.

Purpose Statement

The purpose of this quantitative correlational study was to examine the relationship between usefulness, ease of use, cost, risk, and mobile phone banking adoption. The independent variables were usefulness, ease of use, cost, and risk. The dependent variable was mobile phone banking adoption. The target population of this study was adult mobile phone owners, living in the city of Ouagadougou, who use mobile phone banking. The implications for positive social change could include the potential to provide improved understanding of mobile phone banking industry to business leaders; to increase the affordability, availability, and quality of mobile banking service for Burkina Faso residents; and to foster access to affordable financial services for individuals in Burkina Faso.

Role of the Researcher

In quantitative correlational studies, the role of the researcher is to collect and analyze data without manipulating participants or individuals involved in data collection

(Yilmaz, 2013). As Frels and Onwuegbuzie, (2013) suggested, the role of a researcher in a quantitative study is to collect numerical data and to use statistics or mathematic methods to test a hypothesis. Therefore, I collected and recorded data on participants of the study in a computer database and maintain the integrity of the data. My role was also to compile, organize, analyze, and interpret data related to mobile phone banking adoption among Burkina Faso residents. I tested the hypotheses and used the results to answer the research question. Researchers use validated instruments to gain reliability and validity (Venkatesh et al., 2013). To gather necessary data to answer the research question, I used existing questions from existing validated instruments, for which researchers have obtained evidence of reliability and validity.

I am a resident of the city of Ouagadougou who occasionally uses mobile phone banking services. As many residents of Ouagadougou, I faced tremendous difficulties transferring money to individuals living in remote areas before telecommunication companies' leaders launched mobile phone banking services in Burkina Faso. Thus, I investigated mobile phone banking adoption in Burkina Faso. Company leaders and marketers may use the results of this study to better meet mobile banking customers' needs.

With a thorough understanding of the Belmont Report (U.S. Department of Health, Education, and Welfare, 1979), researchers can enhance their understanding and awareness about regulations for the use of humans in research. Researchers comply with the Belmont Report requirements to ensure the protection of participants in research

studies. To fulfill the ethical principles for using human subjects for research, I applied in this study the ethical requirements of respect for persons, beneficence, and justice.

To conduct this study, I maintained a high level of ethical standard in every stage of the inquiry. Thus, before inviting subjects to participate, I requested the necessary permissions to conduct the study from the Institutional Review Board (IRB) of Walden University. Researchers commit themselves to respect the rights of study's participants. Therefore, I used informed consent to ensure research participants understood their rights. Furthermore, I encouraged open and honest responses from participants to ensure I can draw valid conclusions based on reliable data.

Participants

The population for this study was mobile phone users living in the city of Ouagadougou, Burkina Faso. Participants for this study were individuals who (a) were older than 18 years of age, (b) owned a mobile phone, (c) were living in Ouagadougou, and (d) used mobile phone banking. I recruited participants using an online survey platform (SurveyMonkey). I created a web link on SurveyMonkey platform to distribute the survey to targeted participants. To send information to the potential participants I posted the survey web link on the social media pages (Facebook and LinkedIn) of the two telecommunication companies (Orange Burkina Faso and Telmob Burkina Faso) providing mobile phone banking services in Burkina Faso. I used a series of demographic questions to screen participants for eligibility before they take the survey.

I used SurveyMonkey to access participants of this study. The mobile phone banking customers who met the conditions to participate and who consented to

participate took the survey. Researchers have suggested that the SurveyMonkey platform is appropriate to gain access to the participants of a quantitative study (Chen, 2013; Jinbaek et al., 2013; Nur et al., 2014). Researchers argued that SurveyMonkey is a quick and efficient way to gather a large group of relevant participants (Chen, 2013; Jinbaek et al., 2013; Nur et al., 2014). On SurveyMonkey, I posted a notice explaining the scope of the study, the confidential policy, and the requirements to participate in the survey. Using a notice enabled me to explain how I protected participants' identities and the information I collected as well as participants' right to withdraw from the study at any time prior to taking or submitting the survey. Therefore, a participant could stop the survey process at any time without penalty.

To ensure findings are generalizable, the participants were aligned with the population applicable to the research questions (Yilmaz, 2013). Considering the eligibility requirements, I gathered a relevant sample as I applied no restriction to participation beyond the exigencies of this study. Therefore, adult mobile phone users who lived in Ouagadougou and who used mobile phone banking services were in line with the research question of this study: To what extent is there a statistical relationship between perceived usefulness, ease of use, cost, risk, and mobile phone banking adoption in Burkina Faso?

Research Method and Design

Research Method

Researchers use the quantitative method to measure the interaction among variables to answer the research question (Crede & Borrego, 2014; Lunde, Heggen, &

Strand, 2013; Yilmaz, 2013). According to Yilmaz (2013), researchers use the quantitative method to examine the relationships and differences between and among variables. Therefore, I used the quantitative method for this study because I collected numerical data and analyze the results statistically.

Yilmaz (2013) suggested that the qualitative method is more appropriate for exploring central phenomena and gathering information from open-ended questions, which is not the case for this study. As a result, I did not use the qualitative approach for this study. Researchers use mixed methods research to combine both quantitative and qualitative research strategies into one study (Metens & Hesse-Biber, 2012). I did not use the mixed methods because the scope of investigation for a mixed methods study was beyond the needs for this study. If I were to use mixed methods research, I would have to combine both quantitative and qualitative methods.

Research Design

Researchers use the correlational design to examine the extent to which predictor variables predict criterion variables (Field, 2013; Pazos et al., 2013). Therefore, I used the correlational design for this study because I examined the extent to which four variables predict one criterion variable. I did so using a multiple regression analysis application. In addition, I used a correlational research design because the purpose of this study was to examine the relationships between variables without manipulating the participants of the study.

Researchers use the experimental design when the objective for a study is to control or randomly assign participants to levels of the variables (Field, 2013; Thamhain,

2014; Yilmaz, 2013), which was not the case for this study. As a result, I did not use an experimental design for this study. Furthermore, I did not use a quantitative descriptive design, as I did not attempt to describe the current characteristics of mobile phone banking in Burkina Faso. A descriptive design does not imply drawing relationships between or among variables, while correlational design does result in examining possible relationships among variables (Venkatesh et al., 2013).

Population and Sampling

The general population for this study was adult mobile phone owners living in Burkina Faso who use mobile phone banking currently. The specific geographical area for the population of the study was the city of Ouagadougou, Burkina Faso. In 2015, the population of Ouagadougou was equal to 15.1% of the total population of Burkina, and 52% of residents were female while 48% were male (World Bank, 2015). The population was appropriate for answering the research question of the study: To what extent is there a statistical relationship between usefulness, ease of use, cost, risk, and mobile phone banking adoption in Burkina Faso? With a mobile phone penetration of 59.45% in Burkina Faso (ARCEP, 2013), about 66.4% of customers aged 18 or older living in Ouagadougou had the potential to use their mobile phone to access mobile phone banking services (World Bank, 2015).

The sampling process begins by defining the population of the study and then specifying the sampling method and determining the sample size (Field, 2013). The advantage of using random sampling is that researchers can reach greater result accuracy and generalize findings from a sample to a population (Field, 2013). However, Field

(2013) suggested that the disadvantage of using random sampling is that researcher will need to use a large sample of participants to achieve the desired accuracy. With probability sampling, every element of the population has equal probability of selection in the sample. I used probability sampling because Field suggested researchers use this technique for making inferences to the population. Nonprobability sampling is a sampling technique that does not enable researchers to give all the individuals in the population equal chances of selection (Field, 2013). Researchers use nonprobability sampling when subjects within the population are difficult to access (Field, 2013). Regardless of the high number of adults using a mobile phone, I have easy access to the study population. Therefore, I used a probability sampling method because researchers have suggested using probability sampling when participants are easily accessible (Carter & Hurtado, 2007; Jeong & Yoon, 2013; Yilmaz, 2013). Probability sampling allows the collection of a representative sample of a population but does not typically allow selection based on specific inclusion criteria (Field, 2013).

I used a probability sampling technique to obtain distribution and participants with characteristics similar to the population. With a probability sampling procedure, researchers can give every element in the target population, and each possible sample of a given size, an equal chance of being selected (Emmerton et al., 2012). As I was investigating mobile banking adoption in Burkina Faso, I used a random sampling, as Jeong and Yoon (2013) used a random sampling process to select participants of a study related to mobile phone banking adoption in Singapore.

This study sample included between 85 and 174 adult participants living in Ouagadougou. The sample size reflected the number of participants necessary to detect if an effect exists when conducting a regression analysis with four predictor variables and one criterion variable (see Faul, Erdfelder, Buchner, & Lang, 2009). Using G*Power 3.1 software, I calculated the appropriate sample size for the study. With α error probability of .05 and four predictors, a minimum sample size of 85 participants is necessary to achieve a power (1 - β) of .80. Furthermore, increasing the sample size to 174 would increase power to .99. Thus, I obtained between 85 and 174 participants for the study to obtain a medium effect size.

Ethical Research

According to Takyi (2015), researchers should give an informed consent form, a summary of the rights of participants, and the objective of the research study to conduct ethical research. Before starting data collection, I obtained approval from Walden University IRB. Prior to participating in this study, participants read the consent form and provided their informed consent. As Cokley and Awad (2013) suggested, the objective of the consent form is to inform participants about their role in the study and their rights to participate or leave the study. To allow participants to provide their consent to participate to this study I imbedded the consent form in the online survey (SurveyMonkey). Participants indicated their consent to participate by selecting they understand their role and consent to take the survey. If a participant decided to stop participation in the study after reading the consent form, the survey page disconnects and this participant was unable to take the survey. Participants could withdraw from the

survey in any stage of the study without penalty by just closing the survey page. Participants did not receive incentives for participating in this study.

According to Snowden (2014), researchers should comply with ethical standards. To ensure ethical protections for participants, I fulfilled the requirement of obtaining Walden University's IRB approval before implementing this research. The objective of IRB approval was to ensure compliance with federal laws, appropriateness of institutional regulation, and appropriate conduct of researchers during the completion of research (Field, 2013; Thamhain, 2014; Yilmaz, 2013).

Participants' identity should remain confidential to meet ethical requirements (Snowden, 2014). To ensure participant protection, I collected no personal information. The participants of the study were adult volunteers who gave their responses anonymously. I used social media to send randomly self-administered survey to potential participants who were adults living in Ouagadougou and who owned a mobile phone. All online information about potential participants is available in a password-protected electronic folder that is accessible only to me and I will delete data 5 years after the completion of the study. To prevent any misuse of the participants' information, I closed my SurveyMonkey research profile after completion of the study and I included the IRB approval number which is 07-14-17-0514715 to establish I met the ethical principles to conduct this study.

Data Collection Instruments

Instrumentation is the process of developing, testing, and using a data collection instrument and an instrument is a data-gathering tool (Yilmaz, 2013). I developed a

survey for data collection (Appendix A) as existing measurement instruments were not appropriate for this study. In past studies, researchers have created instruments to collect data on TAM variables but they have not created any specific instrument to gather information on ease of use, usefulness, security, cost, and mobile phone banking adoption. Therefore, for the measure in this study, I adapted the previously validated surveys that Olasina (2015) and Nur et al. (2014) used to investigate mobile banking adoption based on the existing literature to minimize the potential measurement error. While Nur et al. and Olasina used 12 factors and nine variables to investigate mobile banking adoption and M-banking adoption. I used four constructs to examine relationship between four variables and mobile phone banking adoption. Table 2 presents a summary of the instrumentation.

Table 2

Summary of Instrumentation

Variable name	Variable type	Source	Level of measurement
Usefulness	Independent variable	(Olasina, 2015)	Discrete; nominal
Ease of Use	Independent variable	(Olasina, 2015)	Discrete; nominal
Risk	Independent variable	(Nur et al.., 2014)	Discrete; nominal
Cost	Independent variable	(Nur et al.., 2014)	Discrete; nominal
Adoption of mobile phone banking	Dependent variable	(Nur et al.., 2014)	Continuous; ordinal

I developed a new instrument based on surveys previous researchers used to investigate factors influencing mobile phone banking adoption. I used the questions from Olasina's (2015) study as a guideline to create survey questions to collect data on usefulness and ease of use. Olasina used TAM (Davis, 1989) to conduct a study to assess factors influencing academics and students to adopt mobile banking in Nigeria. Olasina surveyed 150 academics and 350 students to collect data. Olasina conducted a construct

validity to ascertain measurement validity. Researchers design validity test to support or reject the instruments construct validity (Field, 2013; Thamhain, 2014; Yilmaz, 2013). Olasina used the extraction and iterative sequence technique to examine the survey items. The results confirmed the measurement validity as the conclusions were similar to those previous researchers (Hanafizadeh, Keating et al., 2014; Mathew et al., 2014) obtained examining the measurement validity of TAM constructs. In addition, Olasina conducted a measurement reliability test using Cronbach Alpha value. The reliability co-efficient stood at 0.71 suggesting the reliability of the survey items. To ensure instrument validity in this study I retrieved the survey questions related to the constructs of ease of use and usefulness from Olasina's study. The results of Olasina's study indicated a positive correlation between usefulness, ease of use, and mobile banking adoption. As shown in Table 2, ease of use and usefulness are discrete and nominal variables. As Olasina did, I used the TAM constructs of usefulness and ease of use to investigate mobile phone banking adoption in Burkina Faso.

I used questions from the study of Nur et al. (2014) as the guideline to create survey questions to collect data on risk, cost, and mobile phone banking adoption. Nur et al. conducted a study to assess mobile banking adoption among people in Bangladesh. The findings of Nur et al.'s study, surveying 555 participants, indicated financial cost, risk, and subjective norm are the factors affecting people's behavioral intention to adopt. Nur et al. used Cronbach's alpha value to measure the reliability coefficient. Results indicated that alpha values for all samples were greater than the minimum alpha of .65 as DeVillis (1991) suggested. Therefore, the constructs measures are reliable. To ensure

instrument validity Nur et al. developed and adapted a survey instrument from previous studies based on literature review (Moore & Benbasat, 1991; Taylor & Todd, 1995; Tan & Teo, 2000). To ensure instrument validity in this study I retrieved the survey questions related to the constructs of risk, cost, and mobile phone banking adoption from Nur et al.'s study. Risk and cost were discrete and nominal variables while mobile phone banking adoption was the dependent variable for this study. Following Nur et al., I used risk and cost to investigate mobile phone banking adoption in Burkina Faso.

A pilot survey ensures the validity of a survey (Cleary, Horsfall, & Hayter; 2014). Therefore, I performed a pilot survey before collecting data. The objective of the pilot survey was to draw conclusions about the instrument validity. I sent by email the survey to 10 friends aged more than 18 years who use mobile phone banking services to assess if they would answer questions clearly and readily. Participants of the pilot survey take the survey on the SurveyMonkey platform. I analyzed data using SPSS. The administration of the pilot survey allowed me to determine the efficiency of the future survey.

In addition, I collected data on demographic variables of participants (gender, incomes, age). I implemented a pilot survey to ensure the survey was comprehensive with a high level of content validity. Researchers have argued that validity is the extent to which an instrument measures what it claims to measure (Field, 2013; Yilmaz, 2013). Thamhain (2014) argued that research results gain credibility when researchers demonstrate ways of addressing all types of validity threats.

I used an online survey (SurveyMonkey) to collect data for this study. As many individuals use the Internet, an online survey was a rapid way to collect data from

participants of the study (Field, 2013; Thamhaim, 2014; Yilmaz, 2013). I used SPSS to manipulate raw data. I displayed the results of statistics tests in Section 3 of this study. I retained raw data on a computer and these data are available on request.

As high content validity was a requirement of the survey, each question related to an independent variable or related to the dependent variable of the study. The rating scale for each question indicated a respondent's level of agreement or disagreement with the statement. Thus, except questions on participants' demographics, the response to each question of the survey yielded a score from 1 to 5. Furthermore, I used this score for data analysis of the applicable variable. A score of 1 indicated a low level of agreement, whereas a score of 5 indicated a high level of agreement.

I used seven survey questions to collect data on Burkina Faso customers' understanding of mobile phone banking usefulness. Survey questions pertaining to usefulness were Questions 7, 8, 9, 10, 11, 12, and 13. Responses to these items were in the form of a 5-point Likert-type scale where 1 = *strongly disagree*, and 5 = *strongly agree.* The calculation score was the average for the responses of the seven questions. Based on the responses of each participant, I calculated the average for all the participants.

I used six survey questions to collect data on Burkina Faso customers' understanding of mobile banking ease of use. Survey questions pertaining to ease of use were Questions 14, 15, 16, 17, 18, and 19. Responses to these items were in the form of a 5-point Likert-type scale where 1 = *strongly disagree*, and 5 = *strongly agree.* The

calculation score was the average for the responses of the six questions. Based on the responses of each participant, I calculated the average for all the participants.

I used three survey questions to collect data on Burkina Faso customers' understanding of mobile phone banking risk. Survey questions pertaining to risk were Questions 20, 21, and 22. Responses to these items were in the form of a 5-point Likert-type scale where 1 = *strongly disagree*, and 5 = *strongly agree.* The calculation score was the average for the responses of the six questions. Based on the responses of each participant, I calculated the average for all the participants.

I used three survey questions to collect data on Burkina Faso customers' understanding of mobile phone banking cost. Survey questions pertaining to cost were Questions 23, 24, and 25. Responses to these items were in the form of a 5-point Likert-type scale where 1 = *strongly disagree*, and 5 = *strongly agree.* The calculation score was the average for the responses of the three questions. Based on the responses of each participant, I calculated the average for all the participants.

I used three survey questions to collect data on mobile phone banking adoption. Survey questions pertaining to mobile phone banking adoption were Questions 26, 27, 28, and 28. Responses to these items were in the form of a 5-point Likert-type scale where 1 = *strongly disagree*, and 5 = *strongly agree.* The calculation score was the average for the responses of the four questions. Based on the responses of each participant, I calculated the average for all the participants.

Data Collection Technique

The data collection technique covers the steps used to collect data for this study. The data collection for this study required the approval of Walden University's IRB. Quantitative researchers use surveys to ensure reliability and relevancy of the collected data (Field, 2013; Thamhain, 2014; Yilmaz, 2013). Therefore, I used an online survey to collect data for this quantitative correlational study. Regardless of the expanded use of the Internet, an online survey was a rapid and convenient way to reach many participants. Because of its low cost and the quick replies of participants, an online survey is one of the most successful methods for quantitative data collection (Field, 2013; Thamhaim, 2014; Yilmaz, 2013). However, the disadvantage of using an online survey was participants may not have access to the Internet or participants may lack skills to use the Internet.

As a quantitative researcher, I used a survey to collect data online through the SurveyMonkey website, as this data collection technique was more effective than face-to-face interviews, telephone interviews, or interviews via e-mail. Using SurveyMonkey as the survey host site allows creating an environment for participants to take the survey online. When I receive IRB approval, I conducted the pilot survey. I selected ten friends aged more than 18 years as participants for the pilot survey. I shared by email the survey web link to participants to allow them to take the survey on SurveyMonkey platform. The participants of the pilot survey had 1 week to submit their comments for analysis and validation of the survey questions. I closed the survey when I received 5 responses from

participants. I assumed the survey questions were valid as participants of the pilot study answered questions clearly and readily.

After IRB approval and completion of the pilot survey, I sent self-administered surveys (Appendix A) online to potential participants who were adults living in Ouagadougou and who owned a mobile phone. SurveyMonkey hosted the informed consent form and the study survey. Participants had approximately 30 minutes to complete the survey. The online survey participants had 2 weeks to take the survey. If the survey responses did not reach a minimum of 85 responses, I would have sent a reminder to get more individuals involved in the survey. I would close the survey when at least 85 respondents took the survey. I used SPSS to save the raw data retrieved from SurveyMonkey. In addition, I removed participants who did not take the survey completely or who have excessive outliers, as Field (2013) suggested outliers are not useful for analysis.

I stored the information collected on the SurveyMonkey website database until extraction for analysis. I used SPSS to transfer, store, and manipulate data. Researchers use SPSS to conduct multiple statistical reports, check data to ensure the accuracy, and create charts and graphs. I used the SPSS instrument to test if a correlation exists between the dependent variables and the independent variable. I will retain data collected for five years and save data in a password-protected file on a computer to protect the anonymity of the study participants. At the end of the five years, I will destroy data of the study by deletion.

Data Analysis

The data analysis process for this study focused on discussing the statistical test to use to answer the following research question: To what extent is there a statistical relationship between usefulness, ease of use, cost, risk, and mobile phone banking adoption in Burkina Faso?

The null and alternative hypotheses were as follows

Null Hypothesis (H_0): There is no statistically significant relationship between usefulness, ease of use, risk, cost, and mobile phone banking adoption in Burkina Faso.

Alternative Hypothesis (H_1): There is a statistically significant relationship between usefulness, ease of use, risk, cost, and mobile phone banking adoption in Burkina Faso.

Field (2013) indicated multiple regression/correlation analysis (MRC) is highly general and flexible. As a result, I used multiple regression analysis. I inputted the survey data into SPSS version 23 to analyze the data. Researchers use MRC to analyze the relationship between the single dependent variable with two or more independent variables (Karadas, Celik, Serpen, & Toksoy, 2015). The appropriate data analysis technique was MRC because the form of the relationship could be simple or complex, not constrained, and the well-mannered nature of the data analyzed met the underlying assumptions of the model (Field, 2013).

In correlational design, researchers screen the data, checking for missing values and survey errors (Yilmaz, 2013). As Rovai, Baker, and Ponton (2014) suggested, I identified the total number of participants and then determined the number of respondents

who failed to complete the items included in this study questionnaire. Furthermore, I excluded the incomplete surveys from the data analysis in accordance with the suggestion of Little and Rubin (2014).

Adding assumptions about the population's characteristics increase the potential that researchers draw inferences about the population (Cohen et al., 2013). All statistical procedures require assumptions for the development of the mathematical process (Cohen et al., 2013). The use of MRC required the testing and assessing of the following assumptions: (a) normality, (b) linearity, (c) heteroscedasticity, (d) multicollinearity, and (e) autocorrelation (Karadas et al., 2015).

Normality indicates that each independent variable would have a normal distribution. I used a normal probability plot to determine the distribution of data around the dependent variable. If the distribution was not between -1.0 and +1.0, then the independent variable might need transformation (Karadas et al., 2015). Linearity focuses on the relationship between the dependent and independent variables. As Karadas et al. (2015) suggested, I used the test statistic to determine insignificant variables for removal, then the *F*-test to ascertain the usefulness of the model.

The third assumption was that the data should be free from heteroscedasticity, meaning that the subpopulations have different variabilities from others. Heteroscedasticity is the absence of homoscedasticity, which results in errors of the same variance (Karadas et al., 2015). Multicollinearity results in the high degree of correlation among the controlled variables (Karadas et al., 2015). I used the variance inflation factor (VIF) function in the SSPS 23 software to test multicollinearity to ensure the data were

useful for analysis. If the VIF value was less than 5, then multicollinearity was not an issue.

I used the Durbin-Watson test statistic (*d*) function of the SPSS 23 software to check for autocorrelation among errors. If the value of *d* equals 2, then autocorrelation was not present. A value significantly less than 2 indicated a positive serial correlation and a value greater than 2 indicated a negative correlation (Karadas et al., 2015). If autocorrelation occurs, researchers use the Orcutt-Cochran method and Prais-Winsten procedure to eliminate the model (Field, 2013; Karadas et al., 2015).

I took the resulting data from the survey to analyze the relationship between usefulness, ease of use, cost, risk, and mobile phone banking adoption in Burkina Faso. The analysis determined the normal distribution, variance, and standard deviation for each question to determine reliability and validity. Considering the test statistic and the sampling distribution, I assessed the probabilities associated with the statistical test.

Study Validity

This section covered steps to establish the internal and external validity and the statistical conclusion validity for this study. Threats to study validity could come from both internal and external sources (Yilmaz, 2013). Internal validity refers to the validity of instruments used in the study as a valid instrument means that the questions provide an accurate measure of the relevant constructs (Yilmaz, 2013). External validity refers to the generalization of the results to the population of study while statistical conclusion validity relates to errors researchers could make when interpreting the results of a study (Yilmaz, 2013).

Internal Validity

Instrument validity affects the internal validity of a study. When an instrument is not valid, the study may not have sufficient internal validity. Instrument validity means that the questions in an instrument accurately measure the defined construct (Yilmaz, 2013). To ensure validity of instrument, I used a survey including questions that researchers had used in previous peer-reviewed quantitative studies about mobile phone banking adoption. As the design of this study was a nonexperimental design, the internal validity also referred to statistical power, or the ability to detect significance where it exists. Collecting data from many participants increased statistical power that resulted in an alpha level of .05, therefore decreasing rates of Type II error (Yilmaz, 2013).

External Validity

External validity is the extent to which the findings of the study generalize from the sample to the entire population of the study (Yilmaz, 2013). Researchers argued that, when calculating the mean of a score, outliers could have a negative effect, especially for a small sample (Field, 2013; Thamhain, 2014). A representative sample size reduces the threat related to external validity. Using G*Power 3 calculator enables me to compute the required sample size to find significance. Using an alpha level of .05, a power of .80, and an effect size of .15, the required sample size to find significance with four predictors was 85. An alternative for increasing external validity was to eliminate outliers. Outliers are data that exist outside of the scope. The observation of outliers is a concern when raw scores convert to *z*-scores and evaluate to determine if any score exceed +/-3.29 (Yilmaz,

2013). When scores exceed this value, I eliminated them from the analysis to ensure external validity.

Statistical Conclusion Validity

Statistical conclusion validity relates to potential errors researchers make in analyzing data and interpreting research results (Field, 2013; Yilmaz, 2013). A Type I error represents misinterpretation of the potential relationship between the variables of the study. Researchers may identify a relationship between variables when there is not any. As a researcher, I might have identified a relationship between one of the predictor variables and the criterion variable when there was no relationship. Type II error identifies the inverse of Type I error. I might have indicated no relationship exists between variables when a relationship exists. According to Field (2013), relevant means of addressing potential issues with conclusion validity include using a statistical power of .80 or greater, using constructs with good reliability coefficients (.70 or greater), and using standardized study factors.

Transition and Summary

Section 2 included a comprehensive summary of the purpose of the study, role of the researcher, participants of the study, population and sampling, and ethical research. I described the research methods and designs with descriptions of approaches used and the rationale for selecting the specific approaches. Section 2 also included explanations of data collection instruments and techniques. Section 2 concluded with thorough descriptions of the data analysis procedures and the reliability and validity of the survey instruments and statistical procedures. Section 3 will cover the application to

professional practice, offer an overview of the study, present the findings, and offer recommendations for action, social change, and further research.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this quantitative correlation study was to examine the relationship between usefulness, ease of use, risk, cost, and mobile phone banking adoption in Burkina Faso. The independent variables were usefulness, ease of use, risk, and cost. The dependent variable was mobile phone banking adoption in Burkina Faso. Based on the regression results, I rejected the null hypothesis and accepted the alternative hypothesis. Thus, usefulness, ease of use, and cost significantly predicted mobile phone banking adoption. The results of this study may assist business leaders to develop strategies to increase the affordability, availability, and quality of mobile banking service for Burkina Faso residents. This section includes a presentation of the findings, applications to professional practice, implications for social change, and foundation for the recommendations for further research. The section ends with reflections and conclusion for the topic of research.

Presentation of the Findings

In this subsection, I discuss the testing of assumptions, present descriptive and inferential statistics, provide a theoretical interpretation of the findings, and conclude with a concise summary. I employed bootstrapping, using 1,000 samples, to combat the possible influence of assumption violations. Presentation of bootstrapping 95% confidence intervals occurs when appropriate.

Pilot Survey

Cleary et al. (2014) indicated a pilot survey ensures the validity of a survey. I performed a pilot survey to draw conclusions about the instrument validity. I sent by e-mail the online survey link to 10 participants to assess if they would answer the survey questions clearly and readily. The participants were 10 friends who met the study requirements as they were adult mobile phone banking users living in Ouagadougou. I attached a letter of informed consent to the e-mail. In addition, I embedded a link to the online questionnaire (SurveyMonkey) in the body of the e-mail to enable participants to take the survey. Participants provided their consent by clicking on the survey web link. I closed the survey when I received five responses from participants. As the objective of the pilot survey was to assess the reliability of the items of the survey, a convenient sample of five participants was sufficient. Implementing the pilot survey allows me to collect data on participants' understanding of the questions of the survey. I analyzed statistically data collected from these five participants to draw conclusions about the consistency of the survey before collecting data for this study.

Researchers used Cronbach's Alpha to assess the reliability, or internal consistency, of a set of scale or test items (DeVellis, 1991). I computed Cronbach's Alpha using SPSS. Compared to the minimum alpha of .65 that DeVillis suggested, the reliability coefficient as shown in Table 3 stood at .728 suggesting that the items have relatively a high level of internal consistency. Thus, the administration of the pilot survey allowed me to determine the efficiency of the survey. Field (2013) suggested that

a survey is efficient when researchers can use it to collect accurate data for the purpose of the study.

Table 3

Cronbach's Alpha Reliability Statistics

Cronbach's alpha	Cronbach's alpha based on standardized Items	N of items
.728	.823	22

Tests of Assumptions

I evaluated assumptions of multicollinearity, outliers, normality, linearity, homoscedasticity, and independence of residuals. I used tables and figures to present the tests of assumptions. Bootstrapping, using 1,000 samples, enabled me to combat the influence of assumption violations where appropriate.

Multicollinearity. I conducted a test in SPSS version 23.0 to evaluate the severity of multicollinearity. I used the test to determine whether the linear relationship of the independent variables to one another was too close for data analysis. Testing multicollinearity was crucial because there were four predictor variables requiring calculation of tolerance and variance inflation factor (VIF). Lower levels of VIF are desirable while higher levels of VIF may affect adversely the results of the regression analysis. Table 4 reflects no conflicts for the independent variables as the VIF was less than 5 for each, with a tolerance greater than .1 (see Karadas et al., 2015).

Table 4

Multicollinearity of Independent Variables

	Collinearity Statistics	
Model	Tolerance	VIF
Usefulness	.947	1.056
Ease of Use	.953	1.049
Risk	.985	1.015
Cost	.963	1.038

Outliers, normality, linearity, homoscedasticity, and independence of residuals. I evaluated outliers, normality, linearity, homoscedasticity, and independence of residuals by examining the Normal probability plot of the regression standardized residuals as shown in Figure 1 below, and the scatterplots of the standardized residuals as shown in Figure 2 below. A visual examination of the normal probability plot in Figure 1 indicated that there was no serious violation of the normality assumption. As the residuals followed a somewhat straight line provide evidence of no gross violation of the assumption of normality. I evaluated the scatterplot of the standardized residuals. The scatterplot of all the residuals of all the dependent variables showed a dispersed data set with little or no visible patterns. The lack of a clear pattern in the scatterplot of the standardized residuals (Figure 2) also indicated that there were no serious assumption violations.

I detected no major violations of regression assumptions; however, I computed 1,000 bootstrapping samples to combat any possible influence of assumption violations, reporting 95% confidence intervals based on the bootstrap samples when appropriate.

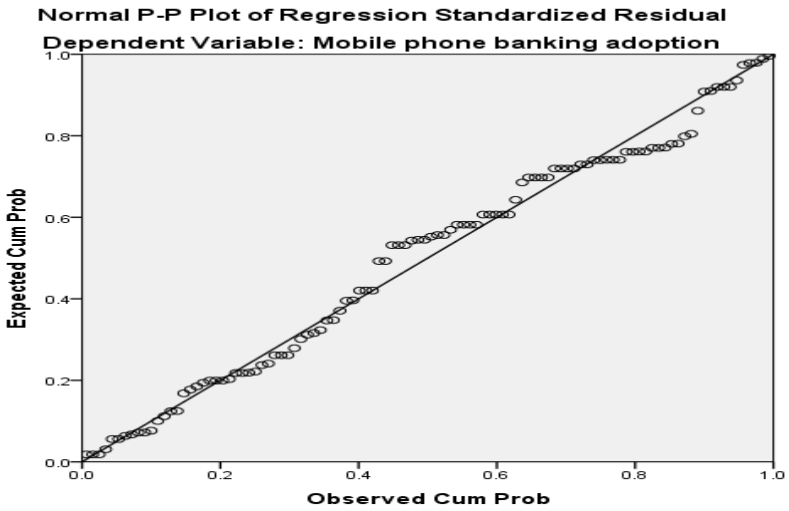

Figure 1. Normal probability plot (P-P) of the regression standardized residuals.

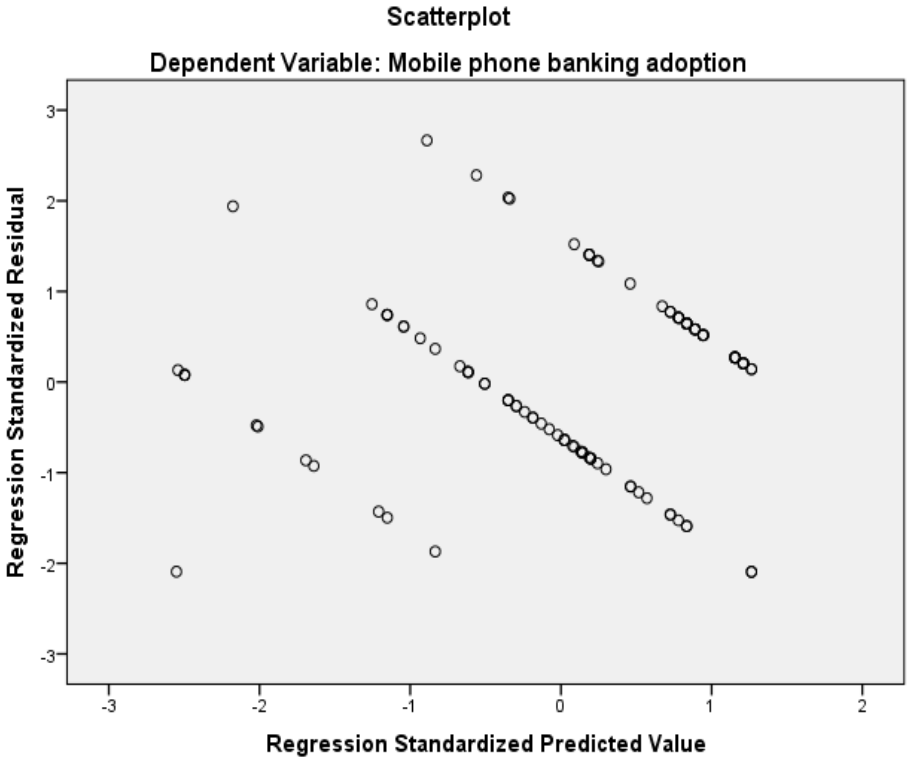

Figure 2. Scatterplot of the standardized residuals.

Autocorrelation. I used the Durbin-Watson test statistic (*d*) function of the SPSS 23 software to check for autocorrelation among errors. Researchers suggested if the value of *d* equals 2, then autocorrelation is not present among the variables of the model (Karadas et al., 2015). Results in Table 5 indicate the value of *d* (1.9) is almost 2 suggesting there is no autocorrelation issue among usefulness, ease of use, risk, cost, and mobile phone banking adoption.

Table 5

Autocorrelation of Variables

Model	*R*	*R* square	Adjusted *R* square	Std. error of the estimate	Durbin-Watson
1	.767[a]	.588	.572	.447	1.962

Note: Predictors: Cost, risk, ease of use, and usefulness. Dependent variable: Mobile phone banking adoption

Descriptive Statistics

Researchers use descriptive statistics to present statistics such as measures of central tendency and spread to serve as a foundation for analysis (Field, 2013). In total, I received 106 completed and usable surveys. Table 6 shows descriptive statistics of the variables including the mean and the standard deviation. Table 6 also shows the bootstraps for coefficients of the variables of this study: usefulness, ease of use, risk, cost, and mobile phone banking adoption.

Table 6

Means and Standard Deviations for Quantitative Study Variables

Variable	*M*	*SD*	Bootstrapped 95% *CI* (*M*)
Mobile phone banking adoption	4.27	.684	[4.14, 4.41]
Usefulness	4.29	.883	[4.11, 4.46]
Ease of use	4.34	.702	[4.22, 4.47]
Risk	2.84	1.381	[2.58, 3.10]
Cost	4.39	.788	[4.24, 4.54]

Note: $N = 106$.

Inferential Analysis and Results

I used standard multiple linear regression, $\alpha = .05$ (two-tailed) to examine the ability of usefulness, ease of use, risk, and cost to predict mobile phone banking adoption in Burkina Faso. The independent variables were usefulness, ease of use, risk, and cost. The dependent variable was mobile phone banking adoption in Burkina Faso. The null hypothesis was there is no statistically significant relationship between usefulness, ease of use, risk, cost, and mobile phone banking adoption in Burkina Faso. The alternative hypothesis was there is a statistically significant relationship between usefulness, ease of use, risk, cost, and mobile phone banking adoption in Burkina Faso.

I conducted preliminary analyses to determine whether results met the assumptions of multicollinearity, outliers, normality, linearity, homoscedasticity, independence of residuals, and autocorrelation. I noted no serious violations. The model as a whole was able to significantly predict mobile phone banking adoption in Burkina

Faso, $F(5, 101) = 36.07$, $p < .000$, $R2 = .59$. The $R2$ (.59) value indicated that approximately 59% of variations in mobile phone banking adoption in Burkina Faso is the result of the linear combination of the predictor variables (usefulness, ease of use, risk, and cost). In the final model, usefulness, ease of use, and cost were statistically significant with usefulness (t= 10.55, p < .00) accounting for a higher contribution to the model than ease of use (t = 2.64, p < .01) and cost (t = 3.46, p < .01). Risk did not explain any significant variation in mobile phone banking adoption in Burkina Faso. The final predictive equation was as follow:

Mobile phone banking adoption in Burkina Faso = .469 +.536(Usefulness) + .168(Ease of Use) –.029(Risk) + .196(Cost).

Usefulness. The positive slope for usefulness (.536) as a predictor of mobile phone banking adoption in Burkina Faso indicated there was about a (.536) increase in mobile phone banking adoption for each one-point increase in usefulness. Mobile phone banking adoption in Burkina Faso tends to increase as usefulness increases. The squared semipartial coefficient (sr^2) that estimated how much variance in mobile phone banking adoption was uniquely predictable from usefulness was (.674), indicating that usefulness accounts for 67.4% of the variance in mobile phone banking, when controlled variables are ease of use, risk, and cost.

Ease of Use. The positive slope for ease of use (.168) as a predictor of mobile phone banking adoption in Burkina Faso indicated there was about a (.168) increase in mobile phone banking adoption for each one-point increase in ease of use. Mobile phone banking adoption in Burkina Faso tends to increase as ease of use as increase. The

squared semipartial coefficient (sr^2) that estimated how much variance in mobile phone banking adoption was uniquely predictable from ease of use was (.168), indicating that ease of use accounts for 16.8% of the variance in mobile phone banking adoption, when controlled variables are usefulness, risk, and cost.

Cost. The positive slope for cost (.196) as a predictor of mobile phone banking adoption in Burkina Faso indicated there was about a (.196) increase in mobile phone banking adoption for each one-point variation of cost. Mobile phone banking adoption in Burkina Faso tends to increase as pricing strategy is more effective. The squared semipartial coefficient (sr^2) that estimated how much variance in mobile phone banking adoption was uniquely predictable from cost was (.221), indicating that cost accounts for 22.1% of the variance in mobile phone banking adoption, when controlled variables are usefulness, ease of use, and risk.

Table 7

Regression Analysis Summary for Predictor Variables

Variable	*B*	*SE B*	*B*	*T*	*P*	sr^2	*B* 95% Bootstrap CI
Usefulness	.536	.051	.692	10.550	<. 00	.674	[.417, .639]
Ease of use	.168	.064	.173	2.638	<. 01	.168	[.056, .303]
Risk	-.029	.032	-.058	-.904	.368	-.058	[-.088, .030]
Cost	.196	.056	.225	3.464	<. 00	.221	[.086, .305]

Note. *N*= 106.

Analysis Summary

The purpose of this study was to examine the ability of usefulness, ease of use, risk, and cost to predict mobile phone banking adoption in Burkina Faso. I used standard multiple linear regression to examine the efficacy of usefulness, ease of use, risk, and cost to predict the value of mobile phone banking adoption in Burkina Faso. The results indicated that no serious violations occurred. The model enables to significantly predict mobile phone banking adoption in Burkina Faso, $F(5, 101) = 36.07$, $p < .000$, $R2 = .59$. All the variables except risk provide useful predictive information about mobile phone banking adoption in Burkina Faso. In conclusion, there is a statistical strong relationship between usefulness, ease of use, cost, and mobile phone banking adoption in Burkina Faso. However, contrary to the findings of prior studies (Jeong & Yoon, 2013; Nur et al., 2014), risk was not a significant predictor of mobile phone banking adoption.

Theoretical Conversation on Findings

Many relationships exist between the scholarly literature and this research. Technology acceptance model (Davis, 1989) as theoretical framework of this study, serves to explain how usefulness and ease of use affect mobile phone banking adoption. Technology acceptance model is a systems theory that indicates how individuals come to accept and use technology. The application of TAM to this study resulted in a better understanding of the relationship between usefulness, ease of use and mobile phone banking adoption. The application of TAM to business practices facilitated the implementation of mobile phone banking in Burkina Faso. The regression result indicated that usefulness and ease of use are significant predictors of mobile phone banking adoption in line with the propositions of TAM as a theoretical framework. In this study, usefulness, ease of use, and cost were the significant predictors of mobile phone banking adoption in Burkina Faso. Many researchers previously confirmed a link between usefulness, ease of use, and mobile phone banking adoption (Olasina, 2015; Priya & Raj, 2015; Wentzel et al., 2013). Further, many studies, such as the study of Parijat (2016) indicated usefulness and ease of use were predictors of mobile phone banking adoption.

Rogers (1995) created IDT for explaining how innovations are diffused through some channels among people and society over time. The aim of IDT theory is to focus on the perceived risk of innovation to be introduced within a social system. Many researchers used IDT to extend TAM as theoretical framework to investigate mobile banking adoption among customers (Engwanda, 2014). The application of the IDT as

theoretical framework for this study yielded an improved understanding of the patterns of the relationships between risk and mobile phone banking adoption in Burkina Faso. The application of the IDT to business practice might facilitate the implementation of a more comprehensive approach to mobile phone banking adoption. However, the regression result that risk is not a significant predictor of mobile phone banking adoption is not in line with the propositions of IDT as a theoretical framework. Therefore, managers and marketers should consider this finding to design their products and implement effective business strategies to increase mobile phone banking users in Burkina Faso.

The findings of this study confirmed the results of several studies indicating that usefulness and ease of use are predictors of mobile phone banking adoption (Olasina, 2015; Parijat, 2016). The results of the study that Olasina conducted in Nigeria to assess mobile banking adoption indicated customers consider usefulness and ease of use as relevant factors that influence their intention to use mobile banking. Similarly, Parijat (2016) conducted a study in India corroborating that usefulness affects customers' intention to use mobile money services. The results of many previous researches were similar to the findings of this study (Parvin, 2013; Wentzel et al., 2013). Parvin conducted a study in Bangladesh which results indicated that mobile banking users are sensitive to usefulness and innovation. Wentzel et al. likewise found that usefulness and ease of use, positively predicted mobile banking adoption. Ali and Ismail (2014) observed that usefulness and ease of use were drivers of mobile banking adoption. Ali and Ismail found that usefulness and ease of use increase mobile banking adoption rate in Somalia. The results of this study could confirm identifying usefulness and ease of use

were significant predictors of mobile phone banking adoption. Thus, managers and marketers could use the findings of this study to increase the number of individuals using mobile phone banking services in Burkina Faso. However, the results of the study Sharma, Govindaluri, Al-Muharrami, and Tarhini (2017) conducted in Oman suggested that usefulness, compatibility, and social influence were significant predictors of mobile banking adoption while ease of use was not.

In line with studies Mathew et al. (2014) and Nur et al. (2014) conducted, the results of this study confirm a strong statistical relationship exists between cost and mobile phone banking adoption. Cost includes bank fees, telecommunication costs, device costs, and cell phone costs. Thakur (2014) conducted a study in India of which results indicated financial cost was a factor influencing customers to adopt mobile banking services. Alalwan, Dwivedi, and Rana (2017) investigated mobile banking adoption among bank customers in Jordan. Alalwan et al.'s study results indicated price was a driver of mobile banking adoption. Customers are reluctant to use mobile phone banking service when they believe that the cost is high. The results of this study also suggest that cost is a key factor influencing customers to use mobile phone banking services. Thus, business leaders should implement effective pricing strategies to enhance mobile phone banking adoption in Burkina Faso. However, Jeong and Yoon (2013) investigated empirically consumer acceptance of mobile banking services in Singapore. The results of Jeong and Yoon's study indicated that cost was not a factor contributing to explain mobile banking acceptance in Singapore.

Researchers suggested that risk is one of the biggest concerns in adoption and use of mobile phone banking services (Chen, 2013, Jinbaek et al., 2013; Mathew et al., 2014). The risk of disclosing personal or sensitive information to other unauthorized parties that may use it inappropriately affects mobile banking adoption (Parvin, 2013). According to Laukkanen (2016), risk is inherent to innovations such as mobile phone banking. The results of many studies indicated that risk concerns negatively impact customers to use mobile banking services (Laukkanen, 2016; Sulphey, & Prabhakaran, 2014;). In contrast, the results of this study did not confirm these findings as risk is not a significant predictor of mobile phone banking adoption. In addition, these results are in contrast to the findings of the study Sreejesh, Anusree, and Amarnath (2016) conducted to investigate mobile banking adoption in India. The findings of Sreejesh et al.'s study suggested that customers with high level of privacy concern were more reluctant to use mobile banking technology. Even though risk is not a significant predictor of mobile phone banking adoption, business leaders should design their products to prevent risk issues for customers as many researchers suggested that risk is a factor influencing mobile phone banking adoption (Laukkanen, 2016; Sreejesh et al., 2016; Sulphey, & Prabhakaran, 2014).

Applications to Professional Practice

The findings of this study might provide a better understanding of mobile phone banking in Burkina Faso to financial institutions, marketers, and mobile device manufacturers. Furthermore, the results of this study provide a basis for further strategies to expand mobile phone banking to more people and help identify the predicting factors

to mobile phone banking adoption in Burkina Faso. The results of this study indicate that usefulness, ease of use, and cost were the predicting factors of mobile phone banking adoption in Burkina Faso.

The results of this study provide information for increasing the affordability, availability, and quality of mobile banking service for populations in Burkina Faso. The knowledge acquired in this study is useful to formulate more effective strategies to expand mobile phone banking and economic opportunities to underbanked and unbanked people in Burkina Faso. Researchers indicated mobile phone banking is gaining in popularity as people who do not have a bank account use this technology to get access to financial services (Hanafizadeh, Behoudi et al., 2014). Based on the results of this study, mobile phone banking managers, developers, and financial institutions could focus on improving their price strategies as cost is a strong predictor of mobile phone banking adoption. A lower financial transactions price and a lower devices price may result in an increase of the number of mobile phone banking users.

Mobile phone banking managers and developers could also focus on producing better products and services with emphasis on easy to assimilate as usefulness and ease of use are strong predictors of mobile phone banking adoption in Burkina Faso. For example, leaders in mobile phone banking industry should develop effective marketing strategies, technology, and software to address customers concerns about usefulness and ease of use of mobile phone banking services. Doing so, will enable managers to develop marketing tools to better manage business relationships with customers. Managers and marketers could also develop training program to build mobile phone banking retailer's

capacities to enable them to better manage business relationships with customers. Mobile phone banking rate adoption will increase if individuals understand the usefulness and the ease of use of the service. Furthermore, business leaders could use mobile phone banking expansion as an innovative way to include financially people who do not have access to the financial system in Burkina Faso.

Implications for Social Change

The implications for positive social change could include the potential to provide improved understanding of mobile phone banking industry to business leaders. The findings confirmed that the constructs of usefulness, ease of use, and cost as a whole are significant predictors of mobile phone banking adoption in Burkina Faso. Therefore, the potential exists to provide business leaders with accurate knowledge about mobile phone banking adoption in Burkina Faso. The fact that usefulness, ease of use, and cost, as predictors of mobile phone banking adoption, are the outcomes of business interactions with customers has important implications for social change. The potential to build business relationships with customers in a manner that maximizes mutual benefits will have important implications for social change (Dennhy & Sammon, 2015). Mobile banking companies' leaders who understand customers' needs and create effective business relationship with users could increase the rate of mobile phone banking adoption (Bankole et al., 2015). As mobile banking companies' leaders and manager develop their business relationship with customers, they may increase their investment to increase the affordability, availability, and quality of mobile banking service for Burkina Faso residents. Meaning, business leaders and managers could foster access to affordable

financial services for individuals in Burkina Faso. Successful mobile banking companies have a higher likelihood of providing products and services to the local community at lower prices (Mathew et al., 2014). In addition, managers of companies providing mobile phone banking services in Burkina Faso currently could offer trade and employment opportunities to individuals and communities as their business grow.

Improved knowledge of the effects of usefulness, ease of use, risk, and cost on mobile phone banking adoption may assist business leaders to develop strategies to establish effective business relationships with customers. Researchers indicated that mobile banking industry leaders should develop their marketing strategy considering critical factors influencing mobile phone banking adoption among customers (Laukkanen, 2016; Parijat, 2016). Parijat (2016) noted that an effective marketing strategy lead to an increase of mobile phone banking users, which results in an increase of customers using mobile banking to make payments, to transfer money, and to perform commercial transactions. Thus, a key implication for social change is the potential for increasing mobile phone banking adoption rate, the number of mobile phone banking users, mobile phone banking companies' revenues, the affordability, and the quality of mobile phone banking services. Successful mobile banking companies would be able to provide low cost financial services to customers who are mostly unbanked (World Bank, 2015) which may result in an increase of financial inclusion in Burkina Faso.

Recommendations for Action

I recommend actions for both local leaders and managers in mobile phone banking industry. I recommend business managers to improve their understanding of the

factors influencing mobile phone banking adoption in Burkina Faso. I recommend business leaders to establish training programs to improve marketing skills and knowledge of mobile phone banking. As shown in this study, usefulness, ease of use, and cost are significant predictors of mobile phone banking adoption. Thus, managerial training should focus on these factors affecting mobile phone banking adoption in Burkina Faso. Business leaders should implement training programs that will help managers to deal with mobile phone banking customers' concerns effectively.

Another recommendation is that business leaders should consider usefulness, ease of use, and cost as critical factors when they craft their business strategies. As mobile phone banking service users are price sensitive (Mathew et al., 2014), marketers and leaders should use a selective approach to improve mobile phone banking adoption in Burkina Faso. Business leaders should find ways to establish and maintain strong working relationships with customers. Dennhy and Sammon (2015) stated that effective relationship with customers could lead to improved consumers' satisfaction, increased number of mobile phone banking users, and increased revenues. Business leaders and managers in mobile phone banking industry should use multiple but appropriate constructs to craft their products to improve the quality and the financial access to mobile banking services for Burkina Faso residents.

To share the results of this study, I will present the findings to local business leaders and managers. To improve employees knowledge of mobile phone banking, local business managers may share the results of this study through training sessions. Skills employees could help to improve the marketing performance of local mobile banking

companies. In addition, I will share the results of this study with the leaders of customers association in Burkina Faso to improve their understanding of mobile phone banking users' needs. Finally, I have the option to publish the results of this study in local newspapers or in scholarly journals.

Recommendations for Further Research

In Section 1, limitations included the use of Likert-type survey items in a correlational study which limited research participants to a set of closed questions and responses. A semistructured design employing personal interviews could help researchers obtain a better explanation of the phenomenon through participant experiences. Employing the selected survey with a larger sample may substantiate the results of this study on a greater scale. I recommend future researchers replicate this study with a different sample to identify why risk did not significantly affect mobile phone banking adoption. I also recommend researchers explore the same variables in different geographic locations to confirm generalizability of findings as the participants of this study only included adult mobile phone owners living in Ouagadougou.

I did not examine all possible factors affecting mobile phone banking adoption. Therefore, future researchers should investigate the effects of other factors such as credibility, trust, social influence, self-efficacy, and facilitating conditions on mobile phone banking adoption on. I used TAM and IDT as theoretical framework for this study. Future researchers may use other theory such as TAM2 and social cognitive theory to investigate mobile banking adoption.

Additionally, future researchers may choose to use a qualitative method to study mobile phone banking adoption in Burkina Faso. The results of this study might provide researchers with a foundation for qualitative research to explore in-depth customers understanding of mobile phone banking. A qualitative study could indicate why usefulness, ease of use, and cost were predictive factors of mobile phone banking adoption while risk was not a predictive factor.

Reflections

I went into this study expecting that each predictor will have a strong relationship with the criterion. I examined the relationship between four independent variables and one dependent variable. Only three independent variables (usefulness, ease of use, and risk) strongly predicted mobile phone banking adoption in Burkina Faso. Risk did not strongly predict mobile phone banking adoption. I was quite surprised to discover that risk does not matter for customers who use mobile phone banking services in Burkina Faso.

Despite an extensive review of the literature, I did not find a study in which researchers used TAM to investigate mobile phone banking adoption in Burkina Faso. In addition, previous researchers predominantly investigated M-banking adoption using qualitative method. My motivation for this study was based on my interest in investigating factors influencing mobile phone banking adoption in Burkina Faso. I was also motivated to perform this enquiry as I believe that the results of this study could contribute to positive social change for individuals and communities.

I feel that using a Likert-type items limited participants in expressing their perspectives on mobile phone banking adoption. However, using SurveyMonkey site enabled me to protect participants and collect data quickly and easily. Using an online survey was beneficial regarding cost, time, and adhering to IRB research protocol. After completing this study, I believe that the results could contribute to the development of mobile phone banking industry in Burkina Faso.

Conclusion

The quantitative correlational study contains an explanation of the ability of usefulness, ease of use, risk, and cost as a whole to predict mobile phone banking adoption in Burkina Faso. The results could help local business leaders define or redefine their business strategies, as they could be confident that usefulness, ease of use, and cost affect mobile phone banking adoption in Burkina Faso. Effective business strategies could lead to increased affordability, availability, and quality of mobile banking service. The need for effective business strategies is evident by the need for increased rate of mobile phone banking adoption in Burkina Faso. Implementing effective marketing strategies in line with the results of this study could result in an increase of mobile phone banking users and an increase of revenues for local companies operating in mobile banking industry.

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Appendix A: A Survey of Consumer Understanding of Mobile Phone Banking

All survey information will be kept completely confidential. Your responses are very important. Thank you for taking the survey.

Please select the option that applies to you

Section 1 Demographics	1	2	3	4	5
1. Your gender	Male	Female			
2. Your age range	18-24	25-31	32-38	39-45	46-52
3. Education level	High school graduate	some college – no degree	AA degree	BA/ BS Degree	Master's Degree or higher
4. Income (USD)	0-4999	5000-9999	10000-14999	15000-24999	30000+
5. Do you own a mobile phone? Please select the option that applies to you	Yes	No			
6. For how many years have you been living in Ouagadougou Please select the option that applies to you	1	2	3	4	5+
Section 2 – Usefulness	strongly disagree	Disagree	Neutral	Agree	Strongly agree
7. Using mobile phone banking will enable me to pay more quickly	1	2	3	4	5
8. Mobile phone banking makes it safer for me to pay or receive money (as opposed to cash or other forms of transactions)	1	2	3	4	5
9. Mobile phone banking helps me to conduct my banking transactions	1	2	3	4	5
10. I will find mobile phone banking a useful possibility for transactions	1	2	3	4	5
11. Mobile phone banking improves my performance of banking transactions	1	2	3	4	5
12. Using mobile phone banking	1	2	3	4	5

will make it easier for me to make transactions					
13. I will find mobile services useful in conducting my banking transactions	1	2	3	4	5
Please circle the option that applies to you					
Section 3 – Ease of Use	strongly disagree	Disagree	Neutral	Agree	Strongly agree
14. Learning to use mobile phone banking is easy for me	1	2	3	4	5
15. My interactions with mobile phone banking will be clear and well understood	1	2	3	4	5
16. It will be easy to become skilled in the use of mobile banking	1	2	3	4	5
17. I would find mobile phone banking easy to use	1	2	3	4	5
18. I would find the mobile phone banking applications flexible to interact with.	1	2	3	4	5
19. I will find procedures of the use of mobile phone banking adaptable to my needs	1	2	3	4	5
Please circle the option that applies to you					
Section 4 – Risk	strongly disagree	Disagree	Neutral	Agree	Strongly agree
20. I think mobile phone banking is a risky way of banking	1	2	3	4	5
21. I would be concerned about the security aspect of mobile phone banking.	1	2	3	4	5
22. Information regarding my mobile phone banking transactions can be tempered with by others.	1	2	3	4	5
Please circle the option that applies to you					
Section 5 – Cost	strongly disagree	Disagree	Neutral	Agree	Strongly agree
23. I think the mobile phone cost for mobile phone banking is	1	2	3	4	5

expensive.					
24. The cost of subscription is high.	1	2	3	4	5
25. I think the transaction fee is expensive to use.	1	2	3	4	5
Please circle the option that applies to you					
Section 6 – Mobile phone banking adoption	strongly disagree	Disagree	Neutral	Agree	Strongly agree
26. Adopting mobile phone banking will allow me to conduct banking transactions more efficiently	1	2	3	4	5
27. Adopting mobile phone banking will enable me to accomplish banking transactions more quickly.	1	2	3	4	5
28. Adopting mobile phone banking is a convenient way to conduct banking transactions.	1	2	3	4	5
29. Adopting mobile phone banking is useful for managing my finances.	1	2	3	4	5