

## **The Role of Trust in the Relationship between Quality Factors and Customer Satisfaction in Mobile Banking: A Conceptual Framework**

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**Abstract:** Mobile banking is the use of mobile terminals such as cell phones to conduct banking services. Since mobile banking transactions are virtual and involve spatial and temporal separation, they carry great uncertainty and risk. Thus, for customers to adapt mobile banking they need to build trust to assuage perceived risk. Owing to its important role, trust has received considerable attention in information systems research, especially in the e-commerce context such as mobile banking. Typically, trust exerts great influence on customer satisfaction. Under the relationship marketing theory, the mediating role of trust is acknowledged. Although, some researchers discussed the mediating role of trust in mobile banking satisfaction, studies that focused on the role of trust in shaping customer satisfaction in mobile banking are rare. Therefore, the objective of this study is to propose a conceptual framework examining the role of trust mediating the interrelationships of three quality factors (information, system and service qualities) with customer satisfaction in mobile banking. The target population is the users of mobile banking in Somaliland where mobile banking is currently at peak prevalence. The data collected will be analyzed by Structural Equational Model (SEM) which have numerous advantageous over conventional methods in correlating the relationships among constructs.

**Key words:** Mobile banking, trust, quality factors, customer satisfaction, mediation, SEM

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### **INTRODUCTION**

Mobile banking is the usage of mobile phones by customers to perform banking services like transferring money, checking account balance and paying bills. Since, mobile banking doesn't involve in spatial and temporal constraints, users can enjoy the service at anytime and anywhere. This convenience is the greatest attraction of mobile banking which is not only enjoyed by the developed world but also the developing world. Essentially, the spread of mobile phones across the developing world is one of the most remarkable technology stories of the past decade. At this present time, calling and texting via their phones have become the norm for hundreds of millions of first-time mobile phone owners. Nonetheless, many of these same new mobile users live in informal economies, without access to financial services that others take for granted. Indeed, across them developing world there are probably more people with mobile handsets than with bank accounts.

One such places is Somaliland, a small territory located in the Horn of Africa its population is estimated 3.85 million in 2010 while 55% of the population are nomads and 700,000 people live in the capital city,

Hargeisa. Constitutionally, the Republic of Somaliland is a democratic country with a multi-party system.

In June 2009, Somaliland's leading Mobile Network Operator (MNO) Telesom launched Zaad service, the country's first mobile money service. Since then, the service has gained significant traction: in June 2012, almost 40% of Telesom GSM subscribers were active users of Telesom Zaad. What is most striking about the service is the level of activity on the mobile money platform. Active Telesom Zaad users perform over 30 transactions per month on average, far above the global average of 8.5 per month. Telesom Zaad is one of the 14 GSMA Mobile Money Sprinters and is recognized as one of the most successful mobile money services in the world (Penicaud and McGrath, 2014).

Furthermore, Zaad has made it possible for hundreds of thousands of Somalis to receive remittances from their family and friends abroad, therefore saving lives in this conflict-torn country. With more than \$1 billion USD in value per year (>70% of Somali GDP), remittances have been the backbone of the war-torn economy. Without Zaad mobile phone payment service, the effect of these remittances would be minimal. Zaad has made it possible

for remittances to be transferred across the country with a push of a button and with no risk for the sender or receiver, making it possible for thousands of people across Somalia to gain access to basic food items and healthcare.

To understand how enormous Zaad service is in Somaliland, the statistics of Somaliland are compared with three of the highest mobile phone subscription countries (Table 1). Though Somaliland has the lowest rate of mobile subscribers per 100 people, it ranks 1st in the percentage of adults using mobile phones to pay bills (26.2%) and send/receive money (31.5%) among the countries compared.

### Literature review

**Mobile Money for the Unbanked (MMU):** In developing countries, 2.5 billion people are ‘unbanked’ and have to rely on cash or informal financial services which are typically unsafe, inconvenient and expensive. However, over one billion of these people have access to a mobile phone. This provides the basis for mobile money, whereby mobile technology is used to deliver convenient and affordable financial services to the underserved.

With mobile money, customers can convert cash to and from electronic value (e-Money) and they can use mobile money to perform transfers or make payments. Traditional “bricks and mortar” banking infrastructure struggles to make the business model work to serve low-income customers, particularly in rural areas. However, mobile operators already have large airtime distribution networks which can be used to provide customers with a network of mobile money agents where they can perform cash-in and cash-out transactions. Large mobile operators in developing countries typically have 100-500 time more airtime reseller outlets than all of the bank’s branches put together.

Mobile money has already proven to be viable and sustainable with mobile money services such as Safaricom’s M-Pesa (Kenya) and many other deployments from mobile operators such as MTN (Benin, Cameroon, Cote d’Ivoire, Ghana, Guinea Bissau, Nigeria, Rwanda, South Africa, Swaziland, Uganda and Zambia), Telenor (Pakistan) and Zaad (Somaliland) which are growing rapidly and achieving significant scale.

**Trust:** Trust reflects a willingness to be in vulnerability based on the positive expectations towards another party’s future behavior (Mayer *et al.*, 1995). In other words, trust enables users to believe that mobile service providers have enough ability and benevolence to provide useful services to them (Zhou, 2011). Trust is an essential element in any social and business relationship whenever risk and uncertainty exist (McKnight, 2002) trust enables people to be able to live in an uncertain and risky environment (Mayer *et al.*, 1995). It helps to provide ways to diminish complexity in a complex environment by decreasing the number of options that a person has to consider in a given situation.

Trust has been identified as a critical factor for the success of electronic finance due to the open and global nature of the internet or other networks as a transaction infrastructure where uncertainty arises and risk in online transactions makes trust a vital element of e-Finance. A number of researchers have examined the role trust in e-finance and have found that trust directly or indirectly affects customer’s intention to engage in online activities.

Understanding the meaning of trust in the e-Finance is an important step in order to identify its dimensions and antecedents that will be used to develop a trust model for the mobile banking domain. Several researchers have recognized the importance of the trust issue in different contexts such as philosophy, psychology, information science, marketing and management. However, there is no agreement about its definition, dimensions, antecedents and outcomes. There are many reasons that justify this disagreement among researchers. The first is that every discipline views trust from its own perspective based on its research domain (McKnight and Chervany, 2001). For example, in the organizational discipline, Mayer *et al.* (1995) define trust as ‘the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party’. This definition highlights two important components of trust: a willingness of a trustor to be vulnerable and confident expectations. Another example, in marketing is given by Moorman *et al.* (1993) who define trust as ‘a willingness to rely on an exchange partner in whom one has confidence’. This definition draws attention to the importance of confidence in the concept of trust. Second, many researchers have treated the conceptualization of trust as an uni-dimensional construct, ignoring the huge body of literature suggesting that it is a multi-dimensional construct (Gefen and Straub, 2003). This often causes

Table 1: Comparison of somaliland with other countries in the world

Countries	Mobile phone subscription	Mobile phone used to pay bills (% adults)	Mobile used to send to transfer money (% adults)
Saudi Arabia	191.2	15.0	6.5
Russia	179.3	1.7	1.5
Kuwait	160.8	9.5	2.2
Somaliland	26.0	26.2	31.5

researchers to focus narrowly on specific aspects of trust, failing to fully identify its multi-dimensional nature. The third reason is that literature related to trust lacks clear differentiation between trust itself and its antecedents and outcomes (Mayer *et al.*, 1995); for example if trustworthiness is part of trust or a different construct.

**Previous studies on trust in mobile banking:** Compared to the abundant research on online trust, mobile trust has just begun to receive attention from researchers. So far, a total of 16 studies have been done on trust in mobile banking (Shaikh and Karjalooto, 2015). For instance, Vance *et al.* (2008) examined the effect of system quality including visual appeal and navigational structure on mobile user trust. Xiong (2013) suggested a model of mobile banking adoption from value perspective and argued that trust and perceived value have significant impact on behavior intention of adoption of mobile banking. They also opined that bank managers should not pay attention to the value experience of banking clients but also improve trust in order to attract or retain customers. Zhou (2011) indicated that structural assurance and information quality are the main factors affecting initial trust, whereas both information quality and system quality affected perceived usefulness.

Fewer still are the number of studies dedicated to the role of trust in shaping the customer satisfaction in mobile banking. Specifically, only two articles have been published on this matter. First, Chung and Kwon (2009) developed and tested a model that examines how the moderating role of trust in mobile banking influences the interrelationships of information quality, system quality, information presentation and customer satisfaction. In contrast, Koo and Wati (2010) studied the role of trust as a mediating variable in mobile banking environment. The objective of this conceptual study is two fold. First, though Koo and Wati (2010) discussed the mediating role of trust in mobile banking customer satisfaction, they did not have a large sample size for their empirical study due to the penetration of mobile banking in the base case, Indonesia, being relatively low. Somaliland is currently a better representative as the base case. Second, the researchers omitted service quality from their study which is a critical factor in shaping any e-Commerce customer trust. Therefore, in this study all quality factors will be given close attention including service quality.

**Conceptual framework:** As discussed in previous sections, trust is a crucial factor in the acceptance and satisfaction in mobile banking, therefore we propose our research model as shown in Fig. 1. In this model, we

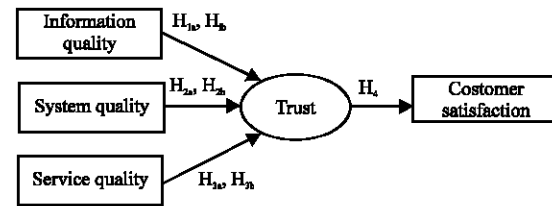


Fig. 1: Proposed model

assessed the role of trust in mediating the interrelationships of quality factors such as information, service and system qualities with customer satisfaction in mobile banking. The research model (Fig. 1) builds on the constructs of the quality factors and their impact on trust and customer satisfaction of Zaad service. The model's dependent construct is 'customer satisfaction' of users of mobile banking services.

**Information quality:** Information quality refers 'information relevancy, sufficiency, accuracy and currency' (Zhou, 2012). Customers access mobile banking to acquire information on their account balance and payment. If this information is irrelevant, insufficient, inaccurate or out-of-date, users may doubt whether service providers have enough ability, integrity and benevolence to provide quality information to them. This may decrease their satisfaction in mobile banking. In this case Mobile banking service can be accessed by using any type of mobile. When users request to view certain information about their account status, the quality of the information should be detailed, relevant and without mistakes. Wrong information may lead to users to question either the intention or the ability of the service provider.

As mentioned earlier, Nicolaou and McKnight (2006) put forward the necessity of information quality to be a trust-building mechanism. In addition, information quality may also affect perceived utility of mobile banking. Users rely on quality information to conduct ubiquitous payment which improves their living and working performance and effectiveness. In contrast, low quality information will decrease users 'perceived utility of mobile banking. Thus, perceived quality should relate positively to trusting beliefs that is if customers perceive that the system is of high quality, they will assume that the information system has positive attributes and will form trusting intentions (McKnight *et al.*, 2002), in turn, increase their perceived usefulness (Davis, 1989). So, the following hypothesis is posited:

- H<sub>1a</sub>: Information quality has a positive effect on trust in mobile banking

**System quality:** System quality is the overall quality of a system is also one of the commonest dimensions along which information systems are evaluated. System quality indirectly impacts the extent to which the system is able to deliver benefits by means of mediational relationships through the usage intentions and user satisfaction constructs for example: ease of use, system flexibility, system reliability and ease of learning as well as system features of intuitiveness, sophistication, flexibility and response times (DeLone and McLean, 2002).

In the same light, system quality reflects the access speed, ease-of-use, navigation and appearance of mobile banking (Kim *et al.*, 2004). Due to the constraints of mobile terminals such as small screens and inconvenient input, users may find it difficult to search for information with mobile banking. Thus an interface with powerful navigation, clear layout and prompt responses may be critical to using mobile banking.

Poor system quality may lead users to feel that service providers have not spent enough effort and investment on mobile banking. This will affect their evaluation on the credibility and benevolence of Providers. Vance *et al.* (2008) reported that system quality including navigational structure and visual appeal affects user's trust in mobile commerce technologies. Poor system quality will decrease user expectation of acquiring positive outcomes in future, consequently lowering the perceived usefulness in the user perspective. For example, if users often encounter service interruption or unavailability, they will not be able to conduct ubiquitous payment. This may lower their perception of mobile banking utility (Zhou, 2011). Therefore, it is hypothesized that:

- H<sub>2a</sub>: System quality has a positive effect on trust in mobile banking

**Service quality:** Service quality reflects service reliability, promptness, assurance and personalization (Gefen and Straub, 2003). Users always expect to obtain ubiquitous mobile banking services. This requires continuous resource and effort investment from service providers as mobile networks have relatively slow responses and instable connections. If users cannot obtain reliable, prompt and personalized services, they may feel that service providers lack ability and integrity to present quality services to them. This may lead to their lack of trust in mobile banking (Zhou, 2012).

Trust is a crucial factor in customer satisfaction and the IS quality aspects are necessary in building trust for mobile banking environment (Lee and Chung, 2009). From psychological state, trust is clearly different from but

antecedent to, behavior and it relates to belief (Bhattacharjee, 2002). As a belief, it refers to trustor's perceptions of trustee attributes that may influence trustee's behavior. According cognitive-based trust literature, it posits that trusting beliefs may form quickly (before the parties have meaningful information) because of some aspects such as reputation, disposition, institutional roles and so forth (McKnight *et al.*, 1998). Furthermore, according to the expectancy-theory (TRA) (Ajzen and Fishbein 1980), external variables influence beliefs about the outcomes associated with performing a behavior which in turn shape attitudes toward performing behavior (Wixom and Todd, 2005). That is, attitude influences intention to perform the behaviour itself. Satisfaction in a given situation is a person's feelings or attitudes toward a variety of factors affecting that situation. In this framework, user satisfaction is typically viewed as the attitude that a user has toward an information system that is it represents an object-based attitude and has been measured by various constructs such as information and system quality (DeLone and McLean, 1992). Therefore, we posit that trust belief (perception of specific mobile banking attributes (McKnight *et al.*, 2002) mediates relationships of quality factors (information, system and service quality) and end user satisfaction:

- H<sub>3a</sub>: Service quality has positive effect on trust in mobile banking

**Trust as a mediator:** The role of trust in developing successful relationships is focused in the relationship marketing theory. Morgan and Hunt (1994) argue that trust is 'key' because it encourages marketers to work at preserving relationship investments by cooperating with exchange partners and resist attractive short-term alternatives in favour of the expected long-term benefits of staying with existing partners. Trust, they argue is the cornerstone of relationship commitment, without it commitment flounders.. Social, technological, legal, economic and cultural bonds all serve as exit barriers, discouraging customers from seeking alternative suppliers. Customers may therefore remain ostensibly loyal, even though they are not satisfied with the service they receive. Bonding which is not based on trust and commitment is unlikely to persist. Under relationship marketing theory, trust is identified as a key mediator that influences company actions on consumer behaviours (Morgan and Hunt, 1994). To say that trust "mediates" the effects of these variables on consumer decisions and behaviours is to argue that trust plays an important "middleman" function in market exchange (Johnson, 2007). Hence, since the above theory justifies the

mediating role of trust, this study will adapt the mediation phenomenon of trust. The above line of reasoning leads us to believe that trust is most likely to play a mediating role between quality factors and customer satisfaction in mobile banking. That is the relationship between each type of quality factor and customer satisfaction is likely to be indirect and to be mediated by trust in mobile banking. Each of these quality factors will act as an antecedent to trust that in turn will become an antecedent to customer satisfaction.

- $H_{1b}$ : Trust mediates the effect of information quality on customer satisfaction
- $H_{2b}$ : Trust mediates the effect of system quality on customer satisfaction
- $H_{3b}$ : Trust mediates the effect of service quality on customer satisfaction

**Trust and customer satisfaction:** The use of technology-enabled services implies confidence and trust that the services delivery system will perform satisfactorily, accurately and reliably and deliver the services required (Walker and Johnson 2006). Teo *et al.* (2008) indicated that satisfaction is sometimes regarded as the antecedent of trust. Balasubramanian *et al.* (2003) found that perceived trustworthiness of an online broker is directly related to online investor's satisfaction. Yoon (2002) posited that satisfaction is an outcome of trust and pointed out that trust correlates positively with end user satisfaction. Trust also creates positive attitudes and perceived behavioural control toward transactions with, reducing uncertainty and providing expectations for a satisfactory transaction (Pavlou, 2003). The survival of internet or mobile banking depends on the bank's ability to convince customers to bank online, therefore building customer trust is vital to internet banking. Customer's trust in internet banking transactions has some unique dimensions: the impersonal nature of the online environment, the extensive use of technology and the inherent uncertainty of using an open infrastructure for transactions (Yousafzai *et al.*, 2009). Similarly, prior literatures also indicated that trust has a positive effect on end-user satisfaction (Chung and Kwon, 2009). Hence, we hypothesized:

- $H_4$ : Trust positively affect customer satisfaction in mobile banking

## **MATERIALS AND METHODS**

**Research method:** The two main research methods are qualitative and quantitative. There are several differences between qualitative and quantitative research. The

purpose of qualitative research is to assist comprehend and decode social interactions. In contrast, the chief objective of quantitative research is to develop and test hypotheses, analyze causal effect and put forward scientific theories and predictions. Qualitative research usually involves words or objects while quantitative studies involve numbers and statistics.

Hence, quantitative research method is the one that matches the objective of this study in examining the mediating role of trust between the interrelationships of quality factors, company reputation and structural assurance with customer satisfaction. Since, the cause-and-effect interactions of the model variables are to be presented in numbers, quantitative research is the suitable way of the study. The target population is the users of Zaad service provided by Telesom Somaliland and the population size is around 400,000 active customers.

## **RSEULTS AND DISCUSSION**

**Data analysis technique:** Several procedures will be conducted to test the study hypotheses. First, prior to conducting the actual statistical tests, the variables will be examined for normality. Secondly, the reliability and validity of the measures will be ascertained. Finally, the data collected will be analyzed by Structural Equational Model (SEM) which have numerous advantageous over conventional methods in correlating the relationships among constructs. And its procedures will be conducted to test the study's hypotheses.

## **CONCLUSION**

The principal aim of this study is to draft a conceptual framework to investigate the role of trust in mobile banking. As proposed in the relationship marketing theory, trust plays a central role in determining the adoption and customer satisfaction of e-commerce services including mobile banking. Although, some researchers discussed the mediating role of trust in mobile banking satisfaction, studies that focused on the role of trust in shaping customer satisfaction of mobile banking are rare. Therefore, we believe that this conceptual framework provides an unexplored platform towards examining the role of trust in mediating the interrelationships of three quality factors (information, system and service qualities) with customer satisfaction in mobile banking. Based on the framework, several corresponding hypothesis were developed. Further research needs to investigate to test the assertions the framework proposes by targeting mobile banking users in

Somaliland. We hope the survey results would validate the hypotheses in the framework and thus deepen the understanding of the role of trust in mobile banking. If so, this framework will be of particular interest to those companies that intend to use mobile banking as a customer retention tool.

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