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The Effect of Consumer Trust on Adoption's Intent in M-Payments: A Conceptual Framework

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ABSTRACT: Since the start of the 21st century, an extensive number of businesses have adopted the mobile payment (M-payments) as a way to cope with the proliferation of new technologies and the changing dynamics of industry competition. The need for convenience has also fuelled enormous interest in the use of mobile payment innovations.

Amid the rampant growth and popularity of this concept, the current literature shows that there is lack of customer trust in B2C mobile payments, and a lack of studies that determine the factors that influence their trust in these payments.

Therefore, this study aims to understand the factors that influence customer trust in Business-to-Consumer (B2C) m-payments and to explore how these factors can influence customer's adoption intent?

KEYWORDS: M payments, Trust, adoption intent, TAM and B2C.

I. CONTEXT

According to recent research findings, smart phone mobile and handheld devices are nowadays firmly established as an alternative form of commerce, known as M-commerce, in most technologically advanced countries [1].

M-commerce entails several applications namely: mobile shopping, mobile marketing, mobile banking, mobile ticketing, mobile entertainment and others. [2]

For a transaction to be completed in M-commerce, a customer needs to exchange values, goods and services with a wireless mobile device. This monetary transaction associated with m-commerce is known as a mobile payment (M-payment).

An M-payment is defined as a payment where a mobile device is used to initiate, authorize and confirm an exchange of goods or services for a monetary value and thus to encourage reduced use of cash at point-of-sales terminals [3]. The immediacy and convenience of M-payments make it possible for customers to perform commercial transactions in a rapid and comfortable manner.

Interestingly, despite the efforts of key operators in this field like banks, mobile network operators and mobile payment service providers (MPSP) in promoting innovative mobile payment options, customer acceptance is merely acquired which has resulted in a lag in the adoption of M payments [2].

Many scholars [1, 2 and 5] in the field of electronic and mobile commerce have argued that there is a lack of trust in M-payments worldwide which they attribute to the lack of understanding of the factors that influence customer trust in M-payments.

Thus, this paper aims to answer the following questions:

1. What constitute trust in M-payment?
2. What is the influence of trust of mobile payment in customer's adoption intent?



Accordingly, this article is organized in two parts. The first section presents the theoretical development around our research question, followed by formulating the research model and hypotheses.

II. LITERATURE REVIEW

A) Trust

Trust means secure willingness to depend on a trustee because of trustee's perceived characteristics [4, 5 and 12]. According to a number of researchers [8, 12 and 13], trust is dynamic phenomenon that can be conceptualized in three interrelated components: *trusting beliefs*, *trusting intentions*, and *trusting behaviors*. Given that these studies focus on pre-adoption of M- payment, this research will tackle the initial trust formation.

In the context of M-payment, Trust is composed of five dimensions: psychological, social, cultural, technological and technical aspects [8, 12 and 13]. Thus, trust in M-payments is complex and is closely related to culture and thus cannot be fully gauged without understanding all its facets.

Dahlberg et al. [9] indicate that consumers can be put in a vulnerable situation since they have literally no control over their transactions. In other words, the success of M- payment transactions are heavily depending on the ethical conducts of mobile service providers, third party vendors as well as the reliability of the mobile technology. These scholars argue that consumers are willing to perform M-payments with vendors who are well-known and established companies. Hence, when consumers decide to place trust in M-payment system, they develop trust through evaluating the trustworthiness of mobile service providers and M- payment vendors.

McKnight et al. [28] point out that the success of M-payment depends on the reliable and stable functioning of mobile technology. These authors indicate that technical problems such as failure of mobile network connection and delays in the systems lead consumers to question the M-payment as a secure means to conduct financial transactions. Consequently, they will not trust a M- payment system.

Thair et al. [15] introduce another component of trust which is the structural assurance. This latter, refers to safeguards such as regulations, laws, and guarantees that make the consumers feel safe to do M-payments transactions. This institutional based trust, according to these authors, reduces uncertainties associated with technology disruption during transaction process. Therefore, the safeguards of the technology or the regulations of the business environment may help consumers engender trust and reduce their uncertainties.

Several scholars [6, 5,40 and 11] indicate that the disposition to trust is key in the initial trust formation. This notion is a type of personality-based trust rooted in the consumers themselves (i.e. background, gender and culture). For consumers with a higher degree of disposition to trust, they tend to easily trust others in their daily life and thus might easily trust M-payment system. In contrast, consumers with a lower degree of disposition to trust tend to resist trusting mobile payment system.

Recent e-commerce studies find that culture plays an important role in the formation of trust [6, 8 and 10]. Amongst the cultural dimensions, these researches indicate that uncertainty avoidance was proven to be the most influential on trust. Uncertainty avoidance is referred to the concept of risk and more particularly risk preference and risk-reducing strategies. To illustrate, a consumers from high uncertainty avoidance culture tend to avoid risks and may have a lower level of trust in M-payment.

B) Adoption Intent

To examine the attitude of users, a number of models have been developed to examine the acceptance and intention of individuals to adopt new technologies in the world of information systems.

The most widely referenced adoption model in the information systems research is Davis's technology acceptance model (TAM) [7]. The TAM is an adaptation of the theory of reasoned action (TRA).

The TAM has two indicators namely the perceived usefulness (PU) and the perceived ease of use (PEOU). These measures are correlated with the decision to adopt a new technology [7]

Hair et al. [15] defined PU as the degree to which a person believes that using a particular [information] system would enhance his or her job performance and PEOU as the degree to which a person believes that using a particular information system would be free of effort.

Although designed to explain new technology adoption, not specifically M-commerce behavior, researchers have recently used the TAM to explore Internet consumer behavior [15,37 and 38]

The following section aims to provide a more comprehensive understanding of how trust is formed at an early stage of M-payment adoption and proposes a model to examine the influence of consumers' trusting beliefs, the characteristics



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of mobile service provider, mobile payment vendor and mobile payment technology on the development of mobile payment trust and eventually influences the adoption intent of consumers.

III. CONCEPTUAL MODEL DEVELOPMENT

In this section, we will discuss the constructs of the proposed model.

A) Trust (TRUST)

Gaining consumer trust in M-payments could be achieved by considering certain psychological, technical, technological, cultural and social factors together. Five main categories of factors obtained from the literature are included. These categories are: consumer characteristics, environmental influences (cultural and social influences), provider characteristics, perceived risks, and mobile-device characteristics. In some instances, insights from m-commerce are presented to provide a better assessment of a factor. [8,24and 10]

- *Customer Characteristics* ((CUS): these characteristics include customer past experiences in m-payments, customer awareness and knowledge about m-payments, and customer personal characteristics such as age and gender [26,5].
- *Environmental Influences* (ENV): include word-of-mouth referral, mass media, external parties such as governmental legislations for customer protection, and supporting the service by an external party and the availability of m-payment services and the abundance of its application. [8,10].
- *Provider Characteristics* (PROV): reputation of the provider, number of years in the business, size of the company providing the service, and brand recognition [6,7].
- *Mobile Device Characteristics*(DEV): some characteristics of the device can influence their trust, such as the mobile design, brand name, the battery life, and software issues, [6,7and 16]
- *Perceived Risk*(RISK)s: financial, technical, security and privacy risks[19,31 and 33]

B) Intent of Adoption (INT)

The belief set for adopting technology consisted of two elements, perceived usefulness (PU) and perceived ease of use (PEOU) [7,15 and 21]

construct	Dimension	Contributing ITEMS
TRUST	Customer characteristics (CUS)	Past experiences (PAS)
		Customer awareness (AWA)
		AGE (AGE)
		GENDER (GEN)
	Environment al (social and cultural) influences (ENV)	Word-of-mouth (WOM)
		Mass media (MED)
		Third-party certificate (TPC)
		Uncertainty avoidance (UA)
		Prevalence of m- payments (PREV)
	Provider characteristics (PROV)	Reputation (REP)
		Number of years inbusiness (NYB)
		Size (SIZ)
		Brand products (BRP)
	Mobile- device characteristics (DEV)	Brand (BRAN)
		Security (SEC)
		Design (DES)
	Perceived risks (RISK)	Financial risks (FIN)
Security risks (SRT)		
Technical risks (TEC)		
Privacy risks (PRIV)		
INTENT OF ADOPTION (INT)	Ease of use (EOU)	
	Usefulness (USE)	

Tab1. Constructs of proposed conceptual model

C) HYPOTHESIS DEVELOPMENT

A) Consumers’ characteristics significant component of trust in M-payments

The literature tackling the concept of trust indicates that there is a strong relationship between consumer awareness and trust in m-payments [2, 5, 35 and 40]. Furthermore, several studies state that consumer propensity to trust which is subject to cultural, past experience ,age and gender background impact on his/her trust in m-payments [14,22,29 and 34]

This leads us to postulate the first hypothesis:

H1: *Customer’s characteristics impact significantly the trust in M-payments.*

B) Provider’s characteristic as significant component of trust in M-payments

McKnight et al. [28] enumerate a number of provider’s attributes namely honesty, competence, predictability, and benevolence. In the field of M-commerce, several studies have indicated that these attributes impact significantly the rust inM-payments[7, 15 and 34].

As such, we propose the following hypothesis:

H2: *Provider’s characteristics impact significantly the trust in M-payments.*

C) Risk as a component of trust in M-payments

Several empirical studies indicate that security and financial risks have significant impact on consumers' trust in M-payments [35 and 38].

According to Zhou [40], privacy risks are strongly linked to trust in M-payments [25, 36, 39 and 40] Thus, we can state the following hypothesis:

H3: *Risks associated with mobile commerce impact significantly the trust in M-payments.*

D) Device attributes as a components of trust in M-payments

Several researchers point out that some mobile device functions can make m-payment more trustworthy than on other devices [1,8 and 29] Moreover, authors such as Hair et al. [15]] state that mobile devices with high security options increase consumer trust in m-payments.

As such, we postulate our hypothesis as:

H4: *Device's attributes impact significantly the trust in M-payments.*

E) Environment as a component of trust in M-payments

When tackling the environment factors of trust in M-payments the literature states the notion of perceived structural assurance (SMT) which is defined as : "consumers' perception about the institutional environment that all structures like guarantees, regulations, and promises are operational for safe, secure and reliable transactions" [7].

Accordingly, an extensive number of research in Information Systems indicates that structural assurance is an important antecedent of trust [7, 34, 42, 32, 31, 35 and 40]. Following this line of argument, we postulate our fifth hypothesis:

H5: *Environment (SMT) impacts significantly the trust in M-payments.*

F) The impact of trust in the adoption's intent in M-payments

The existing literature states that the Lack of trust is an obstacle to consumer's technology adoption. A number of IS studies demonstrate that trust has a positive relationship with the intention to adopt technology [5, 20, 27, 30, 34, 40]. Studies in the mobile payment context also show that trust is a key predictor of mobile payment adoption [7 and 22]. Thus, we can formulate our sixth hypothesis:

H6: *Consumer trust is positively associated with the intention to adopt mobile payment.*

Accordingly and based upon a thorough literature review, we propose the following conceptual model, as depicted in figure 1, to gauge from one hand the factors influencing trust in M-payment and from another hand how trust in return impact the intent of adoption.

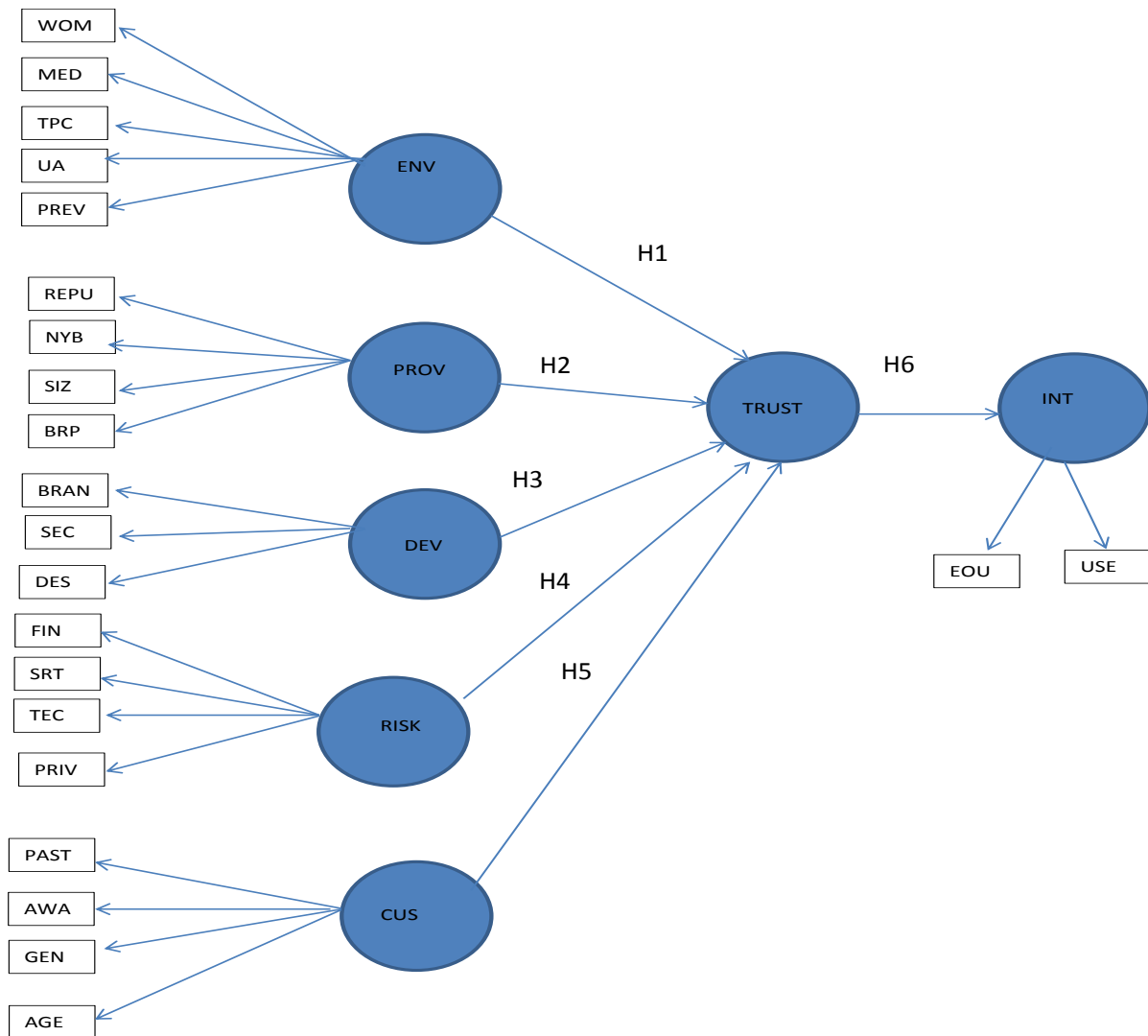


Fig 1: The proposed conceptual model

V. CONCLUSION

The purpose of this paper was to explore factors that influence consumer trust in mobile payments. The findings, as summarized in Table I, list these contributing factors categorized into five main groups.

This study provides important theoretical contributions to the existing trust research, by providing a comprehensive overall picture of factors influencing trust in m-payments from a customer perspective. The proposed model, however, focused on previous studies underway in developed countries.

The task of contextualizing this framework to the specificities of Moroccan consumers is a critical step towards testing and validating our model. Thus, we envisage submitting this model to a focus group in the near future.

**VI. LIMITATIONS OF THE STUDY**

There are a number of limitations in the review conducted in this paper which can be associated with the lack of empirical studies conducted in Morocco or other African countries.

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