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Understanding the adoption of mobile innovation in China

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ABSTRACT

China has already become the largest mobile communication market in the world. Yet research into what factors drive Chinese consumers adoption of mobile innovation is limited. This study makes efforts to investigate Chinese consumers' intentions to adopt mobile innovation, with consideration of their cultural characteristics. Face, a core concept in Chinese cultural values is introduced and its effects on innovation adoption are firstly tested. The study develops and empirically tests a theoretical model incorporated four sets of adoption factors representing general perceptions and perceived social outcomes from using mobile innovation, social influences and perceived barriers. The findings indentify utilitarian perception, hedonic perception, face gains, face loss avoidance, interpersonal influence, cost and quality concern as influential factors affecting adoption intention in Chinese context. This study also provides theoretical and practical implications for academics and practitioners.

1. Introduction

With the rapid development of mobile technology, new business ideas and innovative mobile services are increasingly emerging and consumers are witnessing waves of mobile technology innovations (Doong & Ho, 2012). The mobile technological evolution and large economic stake in commercial development make it necessary to understand consumers' responses to the innovations, since their success depends ultimately on consumers accepting them (Hauser, Tellis, & Griffin, 2006). Hong and Tam (2006) have defined appliances of mobile technology as IT artifacts that have a one-to-one binding with the user, offer ubiquitous services and access and provide a suite of utilitarian and hedonic functions. Accordingly, the personal, universal accessibility and multipurpose characteristics make their adoption drivers somewhat different from traditional IT appliances.

Many studies in Western countries are available that have identified determinants of consumers' adoption of mobile innovations (e.g. de Marez, Vyncke, Berte, Schuurman, & de Moor, 2007; Nysveen, Pederson, & Thorbjornsen, 2005; Pedersen, 2005; Revels, Tojib, & Tsarenko, 2010). While the majority of such research has occurred in Western nations, China has already become the largest mobile communication market in the world. Yet research into what factors drive Chinese consumers adoption of mobile innovations is limited (Chong, Ooi, Lin, & Bao, 2012). This limitation may be addressed as when companies implement introducing strategies to encourage the use of mobile innovations, questions may arise as to whether those adoption determinants found in the Western context will prove to be similarly important in China and as equally effective on Chinese consumers.

It is noted that the rapid evolution of information and communication technology is a global phenomenon (Doong & Ho, 2012), but no country in the world like China has experienced such rapid technological revolutions in the meanwhile it has been going through dramatic socio-economic changes. This does not only result in various mobile innovations exposure but also a general socio-cultural upheaval for Chinese consumers (Chu, 2008). For example, the introduction of 3G in China has been relatively recent (Chong et al., 2012), but with the large scale deployment of 4G networks 4G mobile services will soon be available in this country (Xinhua News., 2013). This kind of situation leads Chinese consumers to be busy with catching up with the latest technological advances. Another question may arise, how does their cultural background affect their ability to adapt to mobile innovations and shape the meaning of mobile innovations use? To investigate Chinese consumers' adoption of mobile innovations, therefore, the Chinese cultural traits that have been missed in the most of previous studies (e.g. Chong et al., 2012; Lee, 2009; Lin, Lu, Wang, & Wei, 2011) should not be ignored.

The value of innovation adoption research lies in its continuous efforts to understand the complex phenomena where users,

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technologies and social settings interact with and transform each other (Hong & Tam, 2006). The current study represents such an effort to increase understanding of mobile innovation adoption in Chinese context. It is designed to investigate how Chinese consumers respond to the use of newly launched mobile innovation, with a focus on what factors affect their adoption intentions. Specifically, Chinese cultural characteristics are taken into account in this study, which echoes the view of Chu (2008) that the effect of cultural values should be examined in innovation adoption research.

This paper proceeds as follows: Section 2 reviews the development of innovation adoption research and theoretical background. Section 3 outlines the research framework and model development. Section 4 details the methodology and presents data analysis process and hypotheses testing results. Section 5 discusses the findings, theoretical and practical implications. Section 6 concludes this paper with limitations and future research directions.

2. Background

2.1. Research on innovation adoption

Adoption of an innovation is a critical part of the process of innovation implementation (Rogers, 1995). Innovation adoption research attempts to describe, explain and predict how consumers respond to innovations (Hauser et al., 2006), it has been an area of substantial research interest since the early days of computerization (Moore & Benbasat, 1991).

Innovation adoption research has traditionally been focused on information technologies (IT), when they were mostly adopted by organizations and were used to enhance employees' productivity and effectiveness (Venkatesh & Brown, 2001). As a result, adoption of traditional IT innovations in workplaces has been studied extensively. With the proliferation of internet and mobile communication technologies in everyday life in recent two decades, innovation adoption research has extended its scope to modern information and communication technologies (ICT). Accordingly, innovation adoption research has been conducted in both work and non-work contexts, or organizational and individual contexts.

More recently, with rapid development of mobile communication technology, conventional internet services have been introduced to mobile communication platforms and innovative mobile products and services are increasingly being implemented (Salkintzis, 2004). Subsequently, mobile innovations have become the focus of innovation adoption research (Revels et al., 2010). Mobile innovation adoption study investigates individual consumers' decisions to adopt mobile technological products or services at the individual level of analysis. Aiming to investigate Chinese consumers' adoption of mobile innovations, obviously, the current study is under the theoretical perspective of innovation adoption research.

2.2. Theoretical perspective

Much of innovation adoption research describes and explains individuals' adoption decisions by applying cognitive and social theories. Three popular Western-derived theoretical models have been widely used, namely Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), Theory of Planned Behavior (TPB) (Ajzen, 1991) and Technology Acceptance Model (TAM) (Davis, 1989). While the three models have been applied in a wide range of technology adoption studies including the adoption of mobile technologies, it is argued that there are two primary concerns about their application in current research.

First, in information system literature there has been a strong move towards testing a pre-determined set of variables that measure the antecedent beliefs that underpin an individual's intention to use the technology. However, when using TRA and TPB, researchers should elicit beliefs about the behavior in question prior to testing their model (Ajzen, 1991; Fishbein & Ajzen, 1975). The beliefs that are specific to one situation may not be relevant in other contexts. Besides, in the search for parsimony and generalisability, TAM only included perceived usefulness and perceived ease of use, arguing that they would apply to most innovation adoption contexts, thus making the model suitable for any technology adoption context (Davis, 1989). But the two determinants of innovation adoption are too parsimonious, which makes the model's ability to explain innovation adoption limited to cognitive beliefs with no account of other factors that may provide richer explanations of adoption behavior (Nysveen et al., 2005; Venkatesh & Davis, 2000).

Second, because of the personal, universal accessibility and multipurpose characteristics, mobile innovations are expected to be associated with a set of adoption drivers that are different in part from those identified for traditional innovations (Hong & Tam, 2006; Nysveen et al., 2005). Neglecting these characteristics and simply applying one of the three models may be inappropriate and may fall short of more accurately explaining the adoption of mobile innovations.

Moreover, the application of the three models (TRA, TPB and TAM) in the Chinese context, an Eastern cultural context, might be questionable, as all the three theories originated from a Western context (United States). According to Malhotra and McCort (2001), they need to be adapted and new constructs should be added to the model in non-Western contexts.

Alternatively, instead of selecting one of these three models, researchers can specify research models that are more relevant for the research purpose (e.g. Hong & Tam, 2006; Sullivan Mort & Drennan, 2007). This study does not directly use any of the three major models, but seeks to develop a research framework by drawing on the extant literature on innovation adoption, consumer behavior and psychology, since such an approach is able to provide a richer understanding of the phenomenon of mobile adoptions (Nysveen et al., 2005).

3. Research framework and model development

As discussed above, the current research adopts an alternative way to develop a research framework by drawing on literature from various disciplines to complement each other in developing a synergistic framework. Having examined prior innovation adoption research, related Chinese consumer behavior and psychology literature, this study focuses on four sets of adoption drivers: general perceptions, perceived social outcomes, social influence and perceived barriers. The constructs in the theoretical framework are summarized in Table 1.

General perceptions are beliefs about general rationales perceived by individuals for using a mobile innovation. Social influences consist of factors that deal with how influences from social contexts affect adoption behavior. Perceived barriers include constructs referring to the constraints perceived by Chinese consumers affecting their adoption decisions. Differing from social influence, perceived social outcomes represent social desires or

Table 1
Constructs of the theoretical framework.

Categories	Constructs
General perceptions	Utilitarian perception, hedonic perception
Perceived social outcomes	Face gains, face loss avoidance
Social influences	Interpersonal influence, mass media influence
Perceived barriers	Cost, quality concern