Drivers and Inhibitors of Mobile-Payment Adoption by Smartphone Users

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ABSTRACT

The widespread penetration of smart mobile devices has facilitated rapid growth of mobile location-based services (LBS), which provide users with a variety of benefits and are attractive from a marketing perspective. However, mobile-payment (M-Payment) adoption by users has been below expectations. For better understanding of drivers and inhibitors of the willingness to M-Pay for mobile LBS, this study contributes by conceptual modeling and empirical assessment of user willingness to M-Pay. To test the proposed conceptual research model, data from 122 valid responses were analyzed by employing the Partial Least Squares (PLS) technique. The findings show that Perceived Risk is the main inhibitor of user willingness to M-Pay for LBS and that the magnitude of this inhibitor's negative impact is at least twice the magnitude of any driver's positive impact.

Keywords: Conceptual Model, Location-Based Services (LBS), Mobile Payments (M-Payment), Mobile Services, Partial Least Square (PLS), Perceived Risk

INTRODUCTION

The smartphone, now a valuable and critical business tool for mobile delivery of products and services, has been investigated by academics, professionals, and the media (Bauer, Barnes, Reichardt, & Neumann, 2005; Gao & Küpper, 2006; Hsu & Kulviwat, 2006; Leppäniemi & Karjaluoto, 2005; Varshney & Vetter, 2002). Industry experts predict that the range and extent of mobile products and services available through smart mobile devices will increase exponentially in the coming months and years, as more and more commercial entities realize their profit potential.

The widespread penetration of smart mobile devices facilitates the rapid growth of mobile location-based services. A location-based service (LBS) provides services based on the user's geographical location. It is possible to classify LBSs based on the target market: business-to-customer (B2C) and business-to-business (B2B), the service type: infotainment, navigation, information provision, games, emergency response, supply chain management and tracking (Giaglis, Kourouthanassis, &
Tsamakos, 2003) or, as classified in this study, the delivery mode: pull and push (Paavilainen, 2002). The Pull services are sent to the user upon request while the Push services are non-request based (Unni & Harmon, 2007). According to industry analyses of the current mobile LBS market, the main drivers of this market’s rapid growth include success of new mobile business models, expansion of mobile advertising, expanding of network coverage and increasing of high speed mobile Internet (Pyramid Research, 2011).

Another factor related to this growth is mobile payments (M-Payments). Leading players in the mobile market provides a variety of solutions facilitating of M-Payments. Google proposes, for instance, smartphones with built-in NFC-powered digital wallets (http://www.google.com/wallet/ retrieved on November 24th, 2011). While the share of NFS-enabled smartphones is predicted to reach 30% to 50% of the market by 2014, mobile network operators, banks, and third parties have provided other technological and business solutions. For example, billionaire Richard Branson invested in the startup Square, which proposes an innovative M-Payment solution by integrating the existing technologies of smartphone and credit card (https://squareup.com/ retrieved on November 24th, 2011).

Despite visible M-Payment advantages and regardless of the noticeable agiotage around expectations for M-Payment boom, the status quo shows that there are still many factors inhibiting user willingness to M-Pay. Indeed, a study by the Portio Research (2010) demonstrated that, in 2009, 81.3 million people worldwide M-Paid (2% of mobile subscribers) and forecasted the rise to nearly 490 million (8% of mobile subscribers), by the end of 2014, raising interest in investigating factors driving and inhibiting the willingness to M-Pay.

The next section explores the theoretical grounding for the development of conceptual model described in the third section. Then we outline the methods of data collection and analysis, followed by description of the results obtained via empirical assessment using the partial least square (PLS) approach to structural equation modeling (SEM). The last section is devoted to the discussion and the conclusions.

THEORETICAL BACKGROUND

Since, according to Kim and Zhang (2009) the modeling of an individual’s rationale for adopting smartphone services is under-investigated in the extant literature, one must look into theories developed in the literature about user adoption of other technologies upon investigating acceptance of smartphone applications: Technology Acceptance Model - TAM (Davis, 1989), Diffusion of innovations - DoI (Rogers, 1995, 2002), perceived characteristics of innovations - PCI (Moore & Benbasat, 1991). TAM is a widely cited model for predicting and explaining user behavior and technology usage through focusing on perceived usefulness and perceived ease of use. A thorough review of the literature reveals a small number of researchers who employed TAM to explore M-Payment acceptance. Dahlberg, Mallat, and Öörni (2003) focused on the TAM to understand and explain issues related to the adoption of mobile payment adoption intentions. Viehland and Leong (2007) and Dahlberg and Oorni (2007) examined perceived usefulness and perceived ease of use in the context of consumer willingness to use M-Payment services for retail point-of-sale payments.
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