


Determine Factors of NFC Mobile Payment Continuous Adoption in Shopping Malls: Evidence From Indonesia


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ABSTRACT

Near Field Communication (NFC) mobile payment systems allow users to utilize services through smartphones. There is insufficient literature exploring the adoption of NFC with payment scenarios in developing countries. This study aims to explore the influential factors of consumer adoption of NFC, taking payment behaviors through NFC in Indonesia as an example. One hundred forty-seven participants were enrolled in the 5-point Likert scale survey, and 124 valid samples were analyzed with Partial Least Squares Structural Equation Modeling (PLS-SEM). The results show that trust mediates the effect of context on consumers' continuous intention to use NFC mobile payment. Additionally, trust mediates the effect of perceived risk on consumers' continuous intention to use. The perceived ease of use and perceived usefulness have no effects on consumers' continuous intention to use. The mediating effect of religiosity has not been observed in this study. The findings can enable service providers and local governments to offer better mobile payment services.

KEYWORDS

Determine Factors, Mobile Payment in Indonesia, NFC Mobile Payment Adoption

1. INTRODUCTION

The diffusion of smartphones and the innovation of information and communication technology have not only changed the way people live but also changed all aspects of the whole society. Till the end of 2015, the number of mobile line subscriptions has reached the whole number of the global population (Ericsson Mobility Report, 2016). In recent years, the number of usages of mobile devices is bombing in new emerging countries. For example, ITU (2017) reports that in Indonesia,

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the mobile-cellular subscriptions are higher than the average level of the world (Indonesia: 149.1; World: 101.5). Furthermore, the number of mobile broadband subscriptions has a significant increase from 2016 to 2017, suggesting that the consumers in Indonesia are willing to accept the mobile technologies. Additionally, to support the development of ICT, the government launched the Indonesia Broadband Plan to achieve a fast network connection in government, hospital, and school by 2019 (ITU, 2017). With the gradually improving infrastructure of the telecommunications industry and climate of encouraging from the government, Indonesians obtain the relevant knowledge to connect with innovative technologies and then feel easy to use mobile applications, including mobile payment adoption (Khatimah and Halim, 2016). Ghezzi et al. (2010) believe that the mobile payment system will be an important feature of future mobile phones. Among different mobile payment systems, Near Field Communication (NFC), the next generation of payment technology, has been encouraged to be used at the company level and individual level (Forrester, 2012). Although GSMA (2011) reports that NFC has many benefits compared with past technologies (e.g., SMS), consumers are reluctant to use this new system (Mallat, 2007). Therefore, this study has been conducted to explore the influential factors of the adoption of NFC technology, aiming to help the Indonesian governments realize a cashless society and help organizations to transform. The structure of the paper is organized as follows. First, the review of the mobile payment and related background is elaborated. Second, the research model and the hypotheses are proposed based on past literature. Third, the issues related to data collection are explained. Fourth, the results are demonstrated according to data analysis. Finally, the discussion, implication and conclusion are stated.

2. LITERATURE REVIEW

2.1. Near Field Communication

Mobile payment is defined as the business activities that are acted through wireless handsets and mobile communication devices (Dewan & Chen, 2005; Luna, 2017). The mobile payment system is categorized into proximity payment and business model (Innopay, 2013). There are three payment technologies from the perspective of B2C, including SMS, NFC and QR. All these approaches are established based on different technologies. To be specific, the SMS is established based on several information technologies, including the 'global system for mobile communications', 'general packet radio services' and 'universal mobile telecommunications system' (Sebola and Penzhorn, 2003). QR is a specific 2D barcode containing hundreds of amounts of data (QR code, 2011). NFC is a radio frequency-based technology that allows data to be exchanged in short-range (Forum NFC, 2011). What makes NFC different from the features of the SMS and QR is as follows. NFC has its wide application scope and availability, ease of use, high security, free registration fee and wide added value services (Grassie, 2007; Madlmayr et al., 2008; Csapodi & Nagy, 2007). However, the popularization of NFC is not easy due to the disputes among different interests of stakeholders (Benyó et al., 2009).

2.2. Mobile Payment and its Adoption Studying

Since the mobile payment service was first launched in 1997 by Finnish telecom operator Sonera, the electronic payment method has been regarded as a potential service in the markets (Dahlberg et al., 2003). Mobile payment is regarded as an alternative payment method with features such as convenience, efficient transaction speed, and versatility in today's market (Chen, 2006). The existing literature provides various definitions of this growing payment method (e.g., Dahlberg et al., 2008; Au and Kauffman, 2008; Dahlberg et al., 2006; Chen and Adams, 2005; Chen, 2006; Dahlberg et al., 2003; Mallat, 2007; Van der Heijden, 2002). All these definitions give similar meanings to the function of the mobile payment method and its supporting technologies. At the same time, the only difference is the explanation for mobile payments' usage. Mallat (2007) and van der Heijden (2002) propose that mobile payment enables money or funds to be transferred between organizations or

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