Investigating Factors Affecting Central Bank Information Systems Success: The Case of the Central Bank of Mongolia

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ABSTRACT
This article investigates the factors affecting the success of central bank information systems (IS) in Mongolia. Drawing from the DeLone and McLean (2003) IS success models and Seddon and Kiew’s (1997) path model, the factors that could potentially affect the success of the external and the internal IS of the central bank of Mongolia were empirically investigated. The data analysis was conducted using a quantitative method for the external IS and a mixed method for the internal IS. This article contributes to the academic literature by integrating DeLone and McLean’s (2003) IS success model with Seddon and Kiew’s (1997) path model and by validating the two aforementioned models within the context of central bank information systems in a developing country. This article has also important practical contributions, particularly for the central bank of Mongolia’s authorities. The results, discussions, and implications of this study are elaborated in the paper.

KEYWORDS
Central Bank Information Systems, DeLone and McLean IS Success Model, Seddon and Kiew Path Model, User Performance, System Importance, Developing Country, Mongolia

INTRODUCTION
Currently, information systems (ISs) are being widely applied to support various human activities. IS applications have been extensively studied by scholars, and these applications may range from interactive social networks systems (Foth, 2006), GSM short message systems (Suomi, Serkkola, & Mikkonen, 2007), online websites (McGill & Bax, 2007; Wogalter & Mayhorne, 2008), e-government (Hujran, Aloudat, & Altarawneh, 2013), to banking IS contexts (Williamson, Lichtenstein, Sullivan, & Schauer, 2006). However, it may be argued that one of the most salient applications of ISs is in the banking industry. This is primarily because the banking industry has been considered as the major driver supporting the economic and financial activities of society, and the banking industry is also one of the largest investors in ISs (Andoh-Baidoo, Villarreal, Liu, & Wuddah-Martey, 2010).

Banks may be divided into several types, including commercial banks (privately owned), public/government banks, and the central bank (government owned). Among these categories, the central

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bank is regarded as the most significant bank, particularly in many developing countries, in which it plays a vital role in providing macroeconomic development and reducing poverty (Gray, 2006). Since the central bank is one of the most important policy-making institutions, their functions and processes should be highly credible, effective, and efficient. Given the fact that banking is an information-intensive business (Shih & Fang, 2006), bankers should be aware of the significance of ISs to the growth and survival of their industry (Farhoomand & Huang, 2007). For that reason, IS success factors will play a key role in determining the overall success of the central bank.

Scholars have studied banking related ISs within the context of developing countries. A handful of such prior studies relied on the Technology Acceptance Model (TAM) to investigate online banking IS acceptance (Chandio, Irani, Zeki, Shah, & Shah, 2017) and mobile banking adoption (Sharma, Govindaluri, Al-Muharrami, & Tarhini, 2017). Another prior study developed a novel theoretical framework, the so called E-Banking Adoption Model (Thanh & Thi, 2014). The majority of previous studies, for example, Internet banking (Jagannathan, Balasubramanian, & Natarajan, 2016) and core banking systems (Borena & Negash, 2016) studies, have relied heavily on DeLone & McLean’s (2003) (D&M) IS success model as their main theoretical foundation (the model will be called the D&M IS success model in the remainder of this paper). However, to the best of our knowledge, there are few such prior studies within the context of central banking in developing countries.

This study therefore is aimed toward investigating central bank IS success in Mongolia. The Central bank of Mongolia (CBM) has been declared to be an independent central bank and an official monetary authority of Mongolia since 1991. Its main goal is to ensure the stability of the nation’s economy and finances. The Central bank of Mongolia represents the economy and finances of the entire nation through its monetary and foreign exchange policies, payments, settlement systems, and banking supervision throughout the country (the official CBM website can be accessed at https://www.mongolbank.mn/eng/).

Central Bank of Mongolia Information Systems

The Central bank of Mongolia IS is comprised of two major components, external and internal IS. The external IS, which is CBM’s official website, is used to announce official news and public statements. The official website is also used to provide and store electronic versions of some of CBM’s official documents. Meanwhile, CBM’s internal IS, called the “the RMS system,” also plays a substantial role in supporting CBM’s daily activities. For instance, CBM’s internal IS deals with the preparation and analysis of the information published on its website. These reports are used by CBM’s decision makers and also for accounting conducted by the Mongolian governmental authorities. Data collection and statistical analysis processes are conducted via the RMS system, which also serves as the interbank data transferable mechanism for web-based application ISs.

The Study Objectives

Drawing from D&M IS success model, this study is used to better understand the factors influencing IS success and its effects on user satisfaction and performance related to CBM’s external and internal IS. The D&M IS success model has been regarded as the most widely used and cited theoretical framework by many researchers (DeLone & McLean, 2016). To obtain a more comprehensive view of IS success within the CBM IS context, Seddon and Kiew’s (1997) (S&K) path model (the model will be called the S&K path model in the remainder of this paper) is purposely integrated with the D&M IS success model. CBM’s external and internal IS mentioned above are also empirically investigated in this study.

This article is aimed toward answering the following two research questions: 1) Based on the D&M IS success model and the S&K path model, what are the factors affecting the success of CMB’s external and internal IS, measured by CBM user satisfaction and performance? 2) What are the other factors contributing to the success of CBM’s internal IS? The research objective of this article
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