



Role of intrinsic and extrinsic factors in user social media acceptance within workspace: Assessing unobserved heterogeneity



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ABSTRACT

This study develops and empirically tests a theoretical extension of a technology acceptance model that integrates intrinsic and extrinsic motivators into IT acceptance to predict the adoption of social media within the workspace. The model was tested using cross-sectional data collected from different workplaces in different geographic regions. To detect the homogeneity of users' behavior, we used a response-based procedure for partial least squares. The model was strongly supported for the global model. Our results revealed the existence of distinct adoption behaviors for different groups within the overall sample. These findings advance theory and contribute to future research on social media adoption.

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1. Introduction

Workspace investment in information systems (IS) refers to the use of IS by professionals in their workplace and has been steadily increasing over the years. Organizations are investing heavily in IS not only for improving high-level efficiency but also for strategic value. Some analysts have estimated that such investments represent about 46% of all capital investment in the US economy (Devaraj & Kohli, 2003). From around \$2.1 trillion in 2013 (Aroui, Nguyen, & Youssef, 2015), global IS investments were expected to reach \$3.8 trillion in 2014 (Soste et al., 2015). Moreover, the continuous growth in worldwide IS spending continues to motivate studies of the adoption and acceptance of technology (Nakata, Zhu, & Kraimer, 2008). However, to make full use of such information systems, user acceptance is critical. Without the readiness to use such systems in organizations, resistance can develop that affects technology adoption.

Innovation diffusion theory has been a popular theoretical basis for researchers investigating the adoption of organizational innovation (Damanpour, 1991). Extensive research work has led to

several models and theories about the motivation behind the acceptance or rejection of a given information technology (IT) innovation. The technology acceptance model (TAM) is one (Davis, 1989; Shih, 2004; Song, Nason, & Di Benedetto, 2008). Adapted from the theory of reasoned action (TRA) developed by Ajzen and Fishbein (1980) and Ajzen and Fishbein (1980), Koh and Saad (2006), Davis (1989) proposed that TAM could be used to assess an individual's acceptance of an IT artifact (Davis, 1989). TAM predicts the likelihood of a new technology being adopted by individuals. The model has undergone many extensions, replication, and refinement (Bruner li & Kumar, 2005; Ha & Stoel, 2009; Kwon, Kwak, & Kim, 2015; Porter & Donthu, 2006). (Venkatesh & Davis, 2000) proposed TAM2, an extension of TAM, into which social influence processes (including subjective norm, voluntariness, and image) and cognitive instrumental processes (including job relevance, output quality, result demonstrability, and perceived usefulness) were integrated. These processes are considered to be crucial for studies of user acceptance.

In a subsequent study, (Song et al., 2008) draw on prior studies of TAM to propose an integrated model of the determinants of IT adoption and use at the individual level, TAM3. Amoako-Gyampah and Salam (2004) developed an extended TAM-based model of enterprise resource planning implementation and acceptance. All the TAM models indicate that the behavior of a potential adopter of an IT artifact is explained jointly by two interrelated beliefs, namely, perceived usefulness (PU) and perceived ease of

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use (PEOU) (Davis, 1989). A subsequent study by Koh and Saad (2006) adds a third belief, perceived enjoyment (PE). PE is one of the extrinsic factors suggested by motivation theorists to explain user acceptance of IS (Choi et al., 2013; Choi, Chow, & Liu, 2013; Fisher, 1978; Hajji, Pellerin, Gharbi, Léger, & Babin, 2016; Khan, Hussain, & Saber, 2016; Koh & Saad, 2006; Wang, Gunasekaran, Ngai, & Papadopoulos, 2016). Motivation theorists believe that the intent to use and the actual use of IT are determined by key extrinsic and intrinsic factors (Choi et al., 2013; Fisher, 1978; Hajji et al., 2016; Khan et al., 2016; Koh & Saad, 2006; Wang et al., 2016).

Early studies have helped improve our understanding of the key factors that explain IS acceptance. However, we still face challenges related to IS adoption and use, such as low adoption and under-utilization of IT within the workspace (Song et al., 2008), which constitute “major barriers to successful IT implementations in organizations” (Song et al., 2008). The lack of assessment of unobserved heterogeneity in IS adoption research is considered a key reason for the low acceptance of IT. Complex social and behavioral phenomena are studied in IS research and so it is highly likely that heterogeneity will exist in the samples used to develop, test, and refine models. When this heterogeneity is not uncovered and controlled it is called unobserved heterogeneity and can bias results and conclusions (Ansari, Jedidi, & Jagpal, 2000).

Becker, Rai, Ringle, & Völckner (2013) find that over the past 20 years, a limited number of papers published in top IS journals using structural equation modeling (SEM) have tested unobserved heterogeneity. Most studies assume that empirical data are homogeneous and represent a single population, leading to potential bias when assessing SEM parameters. The present situation may therefore produce invalid conclusions due to unobserved heterogeneity, constituting an important validity threat to the structural model, measurement model, or both (Becker et al., 2013). Consequently, there is call for more research into the methods and techniques for investigating unobserved heterogeneity when using SEM. This study is an initial effort to bridge this gap in the literature.

In this study we focus particularly on social media adoption in the workspace. Social media are emerging as new technological tools that enable the realization of the third wave of electronic commerce, or so-called social commerce, which is defined as “a form of Internet-based social media that allows people to participate in the marketing, selling, comparing, and buying of products and services in online marketplaces and communities” (Stephen & Toubia, 2010). First developed to facilitate communication between a network of friends through pictures, videos, and sharing of daily experiences, social media tools are gaining traction within the workspace (Shami, Nichols, & Chen, 2014) and are expected to transform traditional business processes. For example, they offer improved means of engaging with and influencing consumers (Anderson, Sims, Price, & Brusa, 2011); improving communication with key firm stakeholders (e.g., employees, customers, and suppliers) (Leonardi, Huysman, & Steinfield, 2013; Luo, Guo, & Chen, 2011; Trainor, Andzulis, Rapp, & Agnihotri, 2014); facilitating intra-organizational knowledge sharing (Luo et al., 2011); establishing new business relationships (Anderson et al., 2011; Michaelidou, Siamagka, & Christodoulides, 2011); and improving customer shopping experiences and purchasing decisions (Fisher, 2011; Zhou, Zhang, & Zimmerman, 2011).

The business literature provides evidence that supports the high operational and strategic potentials of social media tools. For example, AirTran Airways has been using Twitter to sell discounted airline tickets (Anderson et al., 2011). Dell generated \$6.5 million in revenue in 2009 from its Twitter presence (Ostrow, 2009). Leidner et al. (2010) found that the use of an internal social networking system at USAA, a Texas based investment firm, helped improve the retention rate of new hires.

The use of social media in the workplace may have gained in popularity over the last few years but it is not universal. A recent survey of 1100 employees in North America by SilkRoad (Stephen, 2012) found that 43% work in organizations where access to social media is completely open, 24% work in organizations where access is monitored, and only 16% of firms completely block access. The study by SilkRoad (Stephen, 2012) also found that regardless of the corporate policy toward social media, 75% of workers access social media on the job from their personal mobile devices at least once a day, and 60% access it multiple times for work and/or personal use.

Firms from various sectors realize the high operational and strategic potentials of social media-related tools and have been pushing for its integration into daily activities in the workspace (Leonardi et al., 2013; Sajda, 1995). However, the history of innovation theory demonstrates that the path toward widespread acceptance of any given technological innovation within the business community can be very long. Therefore, an improved understanding of the factors to be addressed, which is part of the objective of this study, is critical in driving forward the acceptance of social media within the workspace.

Our objectives are:

- 1 To assess the unobserved heterogeneity in our SEM so as to detect the homogeneity of users' behaviors within the model.
- 2 To theoretically develop and empirically validate a research model that extends the models proposed by Kwon et al., (2015) and Santhanam and Hartono (2003), integrating intrinsic and extrinsic factors into IT acceptance to predict social media adoption and use within a given workspace.

More specifically, this study seeks to answer the following research questions:

RQ1: Are users' behaviors homogenous when applying TAM to social media adoption and use in the workspace?

RQ2: What are the critical intrinsic and extrinsic factors that predict social media adoption in the workspace?

This research draws on both the extant literature on social media and IT adoption (mainly TAM and motivation theory). For our research model, we use the response-based procedure for partial least squares (REBUS-PLS) algorithm, which defines a response-based procedure for detecting unobserved unit segments in PLS path modeling.

The rest of this paper is structured as follows. First, we present social media potentials followed by the conceptual development with a focus on TAM, motivation theory, the research model, and the hypotheses. Next we present the REBUS-PLS method followed by the research methodology, results, and discussion, and conclude with the limitations of this study and directions for future research.

2. Conceptual development

2.1. Focus on TAM and motivation theory

From Ajzen and Fishbein's (1980) theory of reasoned action (TRA), (Davis, 1989) developed and proposed TAM to assess an individual's acceptance of an IT artifact. Subsequently, the model has undergone many extensions (Venkatesh, Morris, Davis, & Davis, 2003), replication, and refinement (Chad, Said, & Geoffrey, 2011; Choi, Kim, & Kim, 2011; Ha & Stoel, 2009; Kim & Park, 2011; Kwon et al., 2015; Muk & Chung, 2014; Porter & Donthu, 2006; Steven John & David, 2007; Tabitha, Taner, Katherine, Brian, & Reza, 2006; Yair & Bruce, 2009). According to all related TAM models, the behavioral intention of a potential adopter is explained jointly by two interrelated beliefs: PU—“the degree to which a person believes that using a particular system would enhance his or her job performance”

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