



Exploring digital creativity in the workspace: The role of enterprise mobile applications on perceived job performance and creativity



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ABSTRACT

This study examines enterprise mobile applications (EMA) to explain how creative job performance is revealed from both the habitual use and task-technology fit for EMA, while also considering the moderating effect of organizational agility. Based on a large-scale survey from employees who use EMA in their workplace across industries, our results suggest that the impact of EMA on perceived job performance and creativity as creativity-supporting systems (in terms of both the habitual use and task-technology fit for EMA) is positive and significant. Our results indicate the positive moderating effect of organizational agility on the relationship between task-technology fit for EMA and perceived job performance. We also identify task-(mobility and feedback) and technology-(reliability, accessibility, and overall quality) characteristics that are found to be positively associated with task-technology fit for EMA. Further, we find that external factors, such as perceived critical mass and the reputation of EMA, can more efficiently explain the habitual use of EMA than internal factors, such as trust and self-efficacy for EMA. The present findings enable researchers and practitioners to understand the role of EMA, which facilitates organizational workers' creative work processes, as well as it inspires the exploration of digital creativity in the workplace.

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1. Introduction

With a highly competitive and dynamic environment, many organizations regard *employees' creativity* as a key to search for alternative ways of generating revenues and innovative ways to leverage their internal resources (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Woodman, Sawyer, & Griffin, 1993). In general, creativity in the workplace is defined as the creation of valuable, useful new products, services, ideas, procedures, or processes by employees working together in a work system (Woodman et al., 1993). To establish and maintain organizational competitive advantage through employees' collaboration, many organizations have cultivated *creativity support systems*, which are computer-based tools to enhance boundary-breaking, insightful thinking during problem solving (Abrahama & Boone, 1994; Massetti, 1996). Since business agility and speed to market have been recognized as important concerns in IT management over the last several

years (Luftman & Derksen, 2012), recent academic studies have noted that it is necessary to shift attention to the impact of mobile computing on employees' performance and creativity in the workplace (Vodanovich, Sundaram, & Myers, 2010; Yoo, 2010). Enterprises are now adopting mobile technologies for numerous applications to increase their operational efficiency, improve their responsiveness and competitiveness, and cultivate their innovativeness (Unhelkar & Murugesan, 2010).

In particular, with the consumerization of information technology, *enterprise mobile applications* (EMA) have played a significant role in the explosive growth of mobile computing in the workplace (Bal, 2013; Unhelkar & Murugesan, 2010), and even in improving sales for firms in this field (Beccue, 2012; Perloth, 2012). EMA can be defined as mobile technologies and role-based applications, as companies design them for specific roles and functions in organizations (Bal, 2013). Specifically, EMA enables employees to have greater access to real-time information, and provides them with simple features and functionalities that are easy for them to complete creative tasks. Further, EMA fosters collaboration among employees and various functional units in firms, and facilitates collaboration with other firms of interest and business partners (Unhelkar & Murugesan, 2010). For example, the social networking

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function in EMA that helps organizational workers create and manage connections with groups of people can support collaboration within and outside the firm. Also, access to enterprise systems anytime and anywhere can stimulate workers' creative thinking with regard to their task-related issues under various circumstances (Bal, 2013). Thus, firms, especially those in knowledge-intensive industries, can leverage EMA to support the processes of divergent thinking and can polish new ideas. For that reason, given that creativity can be achieved in terms of the creative process, the creative person, and the creative product through communication and collaboration (Amabile, 1983), we posit that EMA encourages the creative process of internal and/or external works, and it is one of the latest forms of creativity-supporting systems (e.g., Voigt, Niehaves, & Becker, 2012).

Despite the growing importance of EMA and the fact that its impact on employee creativity has been given considerable attention in various literatures (e.g., Beccue, 2012; Unhelkar & Murugesan, 2010), relatively few research efforts have been made to examine how EMA actually leads to employee creativity, specifically with respect to the impact of EMA on job performance. Therefore, the role of EMA as a creativity-supporting system remains unclear. In particular, we have a limited understanding of *how* EMA, as a creativity-supporting system, impacts employee performance and creativity and *what* the key antecedents are of such an outcome through EMA.

In this paper, we focus on perceived job performance as an outcome of EMA, which indicates the efficient role of EMA on employees' jobs, to investigate the impact of EMA as a creativity-supporting system. More specifically, we investigate how EMA use and task-technology fit (TTF) for EMA are associated with employees' perceived performance improvement through EMA, in terms of successful use of EMA to performing their jobs, the satisfactory impact of EMA on their job performance, and productivity increase with the help of EMA (Muchinsky, 2003). Moreover, we expand our theoretical lens to bridge the gap between job performance and individual perceived creativity (Taggar, 2002).

Thus, to develop a deeper understanding of the relationship among EMA, its environment, and employees' perceived job performance and creativity, we develop a comprehensive model that considers the perceived-fit between EMA and employees' tasks, habitual use for EMA, and the organizational environment. With this model, we try to explore digital creativity through EMA in the workplace. Specifically, we examine the relationship among task-technology fit (Goodhue & Thompson, 1995; Lee, Cheung, & Chen, 2007; Lin & Huang, 2008), the habitual use of EMA (Limayem, Hirt, & Cheung, 2007; Ortiz de Guinea & Markus, 2009), and perceived job performance (Muchinsky, 2003), while also considering the moderating effects of organizational agility (Lu & Ramamurthy, 2011; Sambamurthy, Bharadwaj, & Grover, 2003) and the association between perceived job performance and perceived job creativity (Gong, Huang, & Farh, 2009; Ocker, Hiltz, Turoff, & Fjermestad, 1995; Zhang & Bartol, 2010). Moreover, we examine several antecedents of these factors with multiple perspectives (task-related, technology-related, internal, external factors), which influence perceived job performance through EMA. In sum, this paper attempts to address the role of EMA as a creativity-supporting system by posing the following research question: (1) Does the habitual use of EMA improve perceived job performance? (2) What is the impact of task-technology fit for EMA on perceived job performance? (3) Does organizational agility moderate the relationship between task-technology fit for EMA and perceived job performance? (4) What are the impacts of system-related and task-related antecedents on task-technology fit for EMA? (5) What are the impacts of internal and external antecedents for the habitual use of EMA? (6) Does perceived job performance through EMA also improve individual perceived creativity?

Based on a large-scale survey from employees who use EMA in their workplace across industries, our results suggest that the impact of EMA, as a creativity supporting system, on perceived job performance (in terms of both the habitual use and task-technology fit for EMA) is positive and significant. We also find that both a higher task-technology fit for EMA and a high level of habitual EMA use capture greater perceived job performance. Importantly, we found the positive association between perceived job performance and perceived job creativity, even after controlling several factors, such as educational level, job experience, EMA experience, job position, industry, and firm size. Furthermore, we find a positive moderating effect of organizational agility (related to operational adjustment) on the relationship between task-technology fit for EMA and perceived job performance. We identify task and technology characteristics that are found to be positively associated with task-technology fit for EMA. Further, we find that external factors, such as the perceived critical mass and reputation of EMA, can more effectively explain the variance in habitual use of EMA than internal factors, such as trust and self-efficacy for EMA.

The remainder of the paper is organized as follows. Section 2 provides a theoretical background for our research model. Section 3 presents the conceptualized research model and hypotheses. Sections 4 and 5 present the methodology and results of this study, respectively. Finally, Section 6 discusses the theoretical and managerial implications of the findings, and highlights directions for future research.

2. Theoretical background

2.1. Enterprise mobile applications as creativity-supporting systems

Formally, the technologies that "enable people to be more creative more often" are referred to as creativity support systems (CSS) (Shneiderman, 2007). In other words, CSS refers to a class of information systems encompassing diverse types of information systems that share the purpose of enhancing creativity (Avital & Te'eni, 2009; Wierenga & Bruggen, 1998). Thus, the research scope of CSS can cover a broad range of systems, including electronic brainstorming systems, decision support systems, knowledge management systems, and group support systems. These systems can be categorized with respect to the support of creative processes of individuals or groups (Massetti, 1996).

Since there have been vast improvements in computer systems for business uses in the last decade, mobile computing systems in the workplace such as enterprise mobile applications (EMA) have become more accessible and usable, regardless of time and space. Especially, EMA supports collaboration within and outside of firms by providing social networking functions among employees, customers, or enterprises (Unhelkar & Murugesan, 2010). Also, with strong mobility, EMA facilitates internal operational aspects of business, e-transactions, and large-scale information broadcasts to mobile gadgets, and provides information sought by employees such as schedules and meeting agendas (Unhelkar & Murugesan, 2010).

In general, creativity is defined as the production of novel and useful ideas in any domain and creativity by individuals and teams is a starting point for innovation (Amabile et al., 1996). Although, with the advent of new online communication applications, collaborative and social creativity is becoming more accessible than ever before (Fischer, 2005; Watson, 2007), understanding how technology can facilitate the process of collaborative creativity is still in its infancy and many organizations assume that, although they can assess productivity, product revenues, process quality, and a host of other features of the work done in their firms, they cannot assess (or, even recognize) creativity (Amabile et al., 1996; Aragon, Poon, Monroy-Hernández, & Aragon, 2009).

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