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Authors

Chen, Xiayu
Wei, Shaobo
Davison, Robert M
et al.

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How Do Enterprise Social Media Affordances Affect Social Network Ties and Job Performance?

Abstract

Purpose This study investigates how four enterprise social media (ESM) affordances (i.e., visibility, association, editability, and persistence affordances) affect social network ties (i.e., instrumental and expressive ties), which in turn influence the in-role and innovative job performance of employees.

Design/Methodology/Approach A survey of 251 ESM users in the workplace in China.

Findings We find that all four affordances are positively associated with instrumental ties, yet only the association and editability affordances are positively related to expressive ties. Although instrumental and expressive ties are positively related to in-role and innovative job performance, instrumental ties exert more compelling effects on in-role job performance, whereas expressive ties exert more compelling effects on innovative job performance.

Research limitations/Implications This study advances the theoretical understanding of the role of ESM affordances in the workplace. The findings can guide organizations on how to emphasize ESM affordances to improve the job performance of employees.

Originality/Value First, it advances the understanding of ESM affordances by empirically testing four ESM affordances. Second, this empirical research is the first to integrate an affordance lens and social network perspective. It also provides nuanced insights into the four aspects of ESM affordances in terms of their specific influences on two types of social ties. Third, this research supports the validity of treating social network ties as two different types of social ties in the ESM context by demonstrating that instrumental and expressive ties behave differently in terms of their links to antecedents and outcomes.

Key words enterprise social media; affordance; social network ties; performance.

1. Introduction

A new class of information and communication technologies, known as enterprise social media (ESM), has proliferated in organizations to support interpersonal communication and collaboration in recent years (Forsgren and Byström 2017; Kane et al. 2014; Rode 2016). ESM consists of digital platforms that incorporate bundled social media tools, such as microblogs, wikis and social networking services, thus allowing information sharing and social interaction among employees within organizations (Rode 2016). Mäntymäki and Riemer (2016) indicated that an investment in ESM technology can lead to a 365 percent return in three years. An increasing number of companies, including Microsoft, Google and IBM, is expending considerable resources on developing ESM to facilitate communication, coordination and collaboration among employees (Lu et al. 2015). Despite a growing body of research on this emerging area of ESM (Leonardi 2014; Leonardi 2015; Leonardi et al. 2013), insufficient empirical research focuses on whether and how ESM can actually aid or hinder employee job performance (Lu et al. 2015).

Kane et al. (2014) indicated that ESM enables users to act and interact with one another in novel ways by affording new social features that are difficult or impossible to attain in earlier online or offline settings. Therefore, several researchers have recently focused on theorizing the unique ESM functions by adopting an affordance lens (Ellison et al. 2014; Mettler and Winter 2016; Treem and Leonardi 2012). The notion of affordance describes the interaction of the capabilities provided by the materiality of technological artifacts and the intentions of actors (Faraj and Azad 2012; Majchrzak et al. 2013; Sheer and Rice 2017). Researchers have previously suggested that an affordance lens can help us understand the role of technology in organizational dynamics (Faraj and Azad 2012; Treem and Leonardi 2012). For example, Treem and Leonardi (2012) proposed four affordance types enabled by ESM technology (i.e., visibility, association, editability and persistence affordances), and further highlighted that these four affordances were not as available in prior collaborative technologies, such as instant messaging, email and teleconferencing. Extending Treem and Leonardi's (2012) research, other scholars have investigated the contradictions or tensions among affordances (Gibbs et al. 2013; Majchrzak et al. 2013). However, much of this research remains at the conceptual level.

Researchers have begun to theorize about how ESM affordances can aid organizational knowledge sharing and transfer (Gibbs et al. 2013; Leonardi 2014; Leonardi and Meyer 2014; Majchrzak et al. 2013). For instance, Gibbs et al. (2013) argued that ESM affordances can facilitate knowledge sharing by supporting how employees locate expertise and relevant content. Leonardi and Meyer (2014) proposed that ESM affordances can ease knowledge transfer by making the communications of coworkers visible to casual observers. These previous studies on the affordance lens have offered significant insight, but also have several limitations. Central to our study is the fact that these earlier studies excluded social network ties, a key component in the use of ESM (Ali-Hassan et al. 2015; Leonardi 2015; Wu 2013). Wu (2013) stated that one of the most relevant benefits of ESM is to enhance the ability of employees to develop social network ties without face-to-face interaction. Ellison et al. (2014) suggested that ESM affordances may help build and strengthen social network ties because ESM enables communication between employees, provides identity information and offers online space for those with shared interests. However, the potential value of ESM affordances in influencing employee social network ties and relating those ties to employee performance is not yet understood.

Research on social networks tends to focus on their structural properties (Lu et al. 2015). This scenario is problematic because individuals must mobilize resources from their network contacts if they want to be successful (Podolny and Baron 1997). One approach to categorizing these resources is through instrumental or expressive aspects (Ali-Hassan et al. 2015; Wu 2013). On the one hand, instrumental ties typically function by enabling the exchange of work-related resources and involve actions that gather information, professional advice and expertise (Wu 2013). On the other hand, expressive ties represent emotional relationships that offer friendship and involve the exchange of care, alliance and social support (Sparrowe et al. 2001; Wu 2013). Accordingly, focusing on instrumental and expressive ties can enhance the understanding of changes in ESM-induced social network ties. Prior studies have largely ignored the potential role of these two types of social ties in the ESM context.

This brief overview generates two research questions guiding this study:

(1) How do ESM affordances influence social network ties among employees?

(2) How do the social network ties of employees influence their job performance?

We propose a theoretical model that combines affordance theory and social network theory

to answer these questions. The cultural context of this research is China, where an increasing number of companies have adopted ESM in their routine work (Lu et al. 2015). Using affordance theory as the basis (Gibson 1977; Gibson 1986), we argue that ESM affordances can expose employees to more diverse groups of contacts that are in turn useful to enhance both work-related and social-emotional relationships. In particular, we propose that visibility, association, editability and persistence affordances influence instrumental and expressive social ties. Social network theory suggests that such ties foster higher employee performance (Wu 2013). Thus, instrumental and expressive ties are further predicted to influence in-role and innovative employee job performance.

This research makes several important theoretical contributions to existing literature. First, it advances the understanding of ESM affordances by empirically testing four ESM affordances (Ellison et al. 2014; Treem and Leonardi 2012). Second, this empirical research integrates an affordance lens and social network perspective and provides nuanced insights into the four aspects of ESM affordances in terms of their specific influences on two types of social ties. Third, this research supports the validity of distinguishing instrumental and expressive social network ties by demonstrating that they behave differently in terms of their relationships to antecedents and outcomes.

2. Literature Review

2.1. Enterprise Social Media

ESM is defined as "web-based platforms that allow workers to (1) communicate messages with specific coworkers or broadcast messages to everyone in the organization; (2) explicitly indicate or implicitly reveal particular coworkers as communication partners; (3) post, edit and sort text and files linked to themselves or others; and (4) view the messages, connections, text and files communicated, posted, edited and sorted by anyone else in the organization at any time of their choosing" (2013, p. 2). Research into the way social media have been employed by organizations has primarily followed two approaches. The first and more widely studied approach involves an examination of external communication with parties, such as vendors, customers and job candidates (Aral et al. 2013; Rishika et al. 2013; Shang et al. 2017). For example, organizations can broadcast messages on microblogging sites like Twitter, and maintain pages on public social networking sites such as MySpace and Facebook (Leonardi et al. 2013). The second approach involves internal communication, coordination and collaboration within the organization (Aral et al. 2013; Kane et al. 2014; Moqbel et al. 2013). For instance, organizations have increasingly implemented social network-based applications (e.g., Yammer, Jive, Atlassian Confluence and IBM Connections) or integrated digital platforms that incorporate different social media tools (e.g., microblogs, blogs, wikis and social network services) for internal use (Hu et al. 2017; Kügler et al. 2015; Moqbel et al. 2013). Most ESM technologies mimic popular social networking sites, such as Twitter, in look, feel and functions (Leonardi et al. 2013).

Existing empirical research on ESM can be grouped into three key perspectives. The first stream of research focuses on how ESM is applied by employees, often applying social capital theory to explain employees' use of ESM (Sun and Shang 2014), and how ESM usage is related to individual employee performance (Kuegler et al. 2015). The second stream of research emphasizes social behavior on ESM, such as the extent of, and employees' rationales for, knowledge seeking and sharing (Beck et al. 2014; Leonardi 2014; Rode 2016). The third stream of research examines how ESM functions as organizational tools that support communication and collaboration (Leonardi 2015; Treem and Leonardi 2012).

However, previous research has not fully explained how specific ESM affordances, rather

than a particular technology or platform, can exert more specific and significant effects on individual employee job performance. Treem and Leonardi (2012) proposed four types of ESM affordances (i.e., visibility, association, editability and persistence affordances) based on a review of existing research on social media utilization in organizations. Despite their call for more empirical studies to explore the role of ESM affordances in organizational processes, research that focuses on ESM affordances remains scarce. However, Rice et al. (2017) have provided the first quantitative operationalization of organizational media affordances.

2.2. Affordance Theory

Affordance theory was initially proposed by Gibson (1977), who analysed on the relationships between humans or animals and their living environments. Gibson (1986) stated that an animal or a human perceives not what an object is, but what types of uses it can afford; such perceptions of object utility are called "affordances." Since then, scholars have employed the affordance lens to explore the dynamics of technologically induced social exchange (Orlikowski and Barley 2001) and how new technologies can be better designed (Norman 1990).

Researchers have focused on the relational character of affordances (Ellison et al. 2014; Hutchby 2001; Leonardi 2011), asserting that affordances are not exclusive properties of artifacts or people but are rather constituted in relationships between the materiality of the artifact, the person's goals and capabilities and the context of environment (Leonardi 2011). Affordances are possibilities for a particular action within these relationships. Different people can perceive that a technology artifact provides distinct possibilities for action (Ellison et al. 2014). Previous researchers have identified four main merits of using an affordance approach (Hutchby 2001; Koroleva and Kane 2017; Treem and Leonardi 2012). First, an affordance approach provides a mechanism to overcome either material determinism or social determinism, and through emphasizing theories of sociomaterial dynamics, can overcome theories of specific technologies (Leonardi 2013). Second, through avoiding a strictly socially deterministic perspective, focusing on affordances can avoid the minimization of attention to technology properties in explaining organizational changes (Leonardi 2012; Treem and Leonardi 2012). Third, an affordance approach helps people explain the consistency effects within and across organizations based on the features of a new technology (Treem and Leonardi 2012). Finally, focusing on affordances encourages researchers to examine communicative outcomes enabled by the relationship between the functionality of a technology and an organizational context (Leonardi 2011; Treem and Leonardi 2012).

Following Treem and Leonardi (2012), we propose four ESM affordances: visibility, association, editability and persistence. Visibility means that an ESM technology can provide employees with the capability to make their knowledge, preference, behaviors and network connections that were once invisible or difficult to see or be aware of become visible to other coworkers in organizations.(Leonardi 2014; Leonardi 2015; Mettler and Winter 2016). ESM affords association among users and content (Treem and Leonardi 2012) and includes two forms. The first is between two or more people, which can be expresssed through the friends of an individual on an ESM technology, such as those who follow a microblogger. The second is between a person and content, such as a microblog contribution, a wiki contribution, or the tagging of a topic. Editability refers to the ESM capability of allowing employees to revise, add to, modify and change content that they have already communicated or which has been contributed by others, such as deleting content or editing a document (Mettler and Winter 2016; Treem and Leonardi 2012). Finally, persistence allows employees to permanently access content that has been created and published previously (Mettler and Winter 2016; Treem and Leonardi

2012), providing a robust and useful mechanism for communicating, which is difficult to compromise or destroy (Mettler and Winter 2016). Although other forms of computer-mediated communication tools in organizations, such as instant messaging, teleconferencing and email, exhibit a range of affordances, these tools do not provide much of these four affordances, unlike ESM (Ellison et al. 2014; Treem and Leonardi 2012).

2.3. Social Network Ties

The most common focus of social network theory incorporates network configuration and tie strengh (Lu et al. 2015; Zhou et al. 2010). However, recent researchers indicated that people tend to depend on different relations to obtain different benefits (Zhou et al. 2010). This implies that besides strength and structure, social networks might differ in content (Zhou et al. 2010). Previous studies distinguished two different types of social network ties based on the content that flows within a network: instrumental and expressive ties (Chang and Chen 2017; Lin 2007; Manev and Stevenson 2001). Instrumental ties are work-related advice ties, through which workers seek and exchange necessary information, expertise, advice and informal, physical or financial resources to accomplish a task (Lin 2007; Zhong et al. 2012). Instrumental ties allow employees to access diverse information efficiently and effectively (Burt 2004; Wu 2013). Instrumental ties are utilitarian-oriented and as a result are relatively unstable (Chang and Chen 2017; Lee et al. 2001). On the other hand, expressive ties include both positive and negative interpersonal affect and norms (Huang et al. 2013; Umphress et al. 2003; Zhong et al. 2012). Positive expressive ties can provide a sense of personal belonging and identity as well as serve as sources of social support (Chang and Chen 2017). Expressive ties are also useful in the workplace because employees can receive psychological support when encountering difficulties at work (Zhong et al. 2012).

Instrumental and expressive ties may overlap and thus are are not mutually exclusive (Borgatti and Foster 2003; Zhou et al. 2010). Most social network ties among employees are characterized as having both instrumental and expressive features (Huang et al. 2013; Lin 2007). For example, Chen and Peng (2008) demonstrated that both instrumental and expressive ties can be valid in Chinese coworker relationships. However, the primary content of these two types of ties is theoretically distinct (Balkundi and Harrison 2006; Huang et al. 2013). Balkundi and Harrison (2006) indicated that “not all work colleagues are friends, and vice versa” (p. 51). Distinguishing between instrumental and expressive networks is essential for cognitive processes (Ibarra and Andrews 1993).

Previous research on organizational instrumental and expressive ties mainly focuses on the knowledge management area. For example, Zhou et al. (2010) proposed that instrumental and expressive ties affect tacit and explicit knowledge transfer when mediated by cognition-based and affect-based trust. Huang et al. (2013) determined that instrumental and expressive ties moderate the relationship of transactive memory systems (i.e., specialization, coordination and credibility) with knowledge quality. Further, Lin and Lin (2016) indicated that network relationship (i.e., instrumental and expressive ties) stimulates knowledge sharing. Although researchers have suggested the importance of investigating socical capital in the ESM context, there is little such research so far (Lu et al. 2015).

2.4 Job Performance

Job performance is a classic research topic in organizational behavior. Previous studies suggest that job performance is a broad and complex construct including in-role and innovative components (Ali-Hassan et al. 2015; Janssen and Van Yperen 2004).

In-role job performance represents “actions specified and required by an employee’s job

description and thus mandated, appraised, and rewarded by the employing organization" (Janssen and Van Yperen 2004, p. 369). These sets of rules make work behavior predictable, and thus basic organizational tasks can be controlled and coordinated in order to achieve organizational goals (Janssen and Van Yperen 2004). An organization also needs to give employees the freedom to spontaneously innovate to adapt to new opportunities, problems and unusual situations (Jones 2001). Innovative job performance is defined as "the intentional generation, promotion, and realization of new ideas within the organization" (Janssen and Van Yperen 2004, p. 370). The innovation job performance of an employee is measured by the production of new and useful ideas and based on discretionary behavior that goes beyond the mandatory duties (Janssen and Van Yperen 2004; Sparrowe et al. 2001).

3. Research Framework and Hypotheses

We propose a research model (Figure 1) based on the above review. Wu (2013) argued that the adoption of an ESM tool can change social networks over time within an organization, and such change can bring important economic benefits, such as improving worker productivity. However, we propose that, rather than general use of ESM, it is their affordances that more specifically influence the awareness, development and maintenance of social ties in the workplace. For example, Ellison et al. (2014) proposed that ESM affordances can provide employees with fast opportunities to exchange both task-related (instrumental) and social (expressive) information with others in organizations, which can help forge social network ties among employees. Furthermore, prior research indicates that social network ties can be correlated with positive work performance because of the valuable resources, information and knowledge shared through those social networks (Ali-Hassan et al. 2015; Aral et al. 2012). Thus, the model proposes that ESM affordances influence social network ties which in turn influence job performance.

----------Insert Figure 1 about here----------

3.1. The Effect of Visibility Affordance on Instrumental and Expressive Ties

Visibility affordance is associated with both instrumental and expressive social connection among employees (Ellison et al. 2014). Visibility affordance can foster instrumental ties by increasing the accuracy of the instrumental knowledge (i.e., knowledge on how to do something) and metaknowledge (i.e., knowledge of "who knows what" and "who knows whom") of employees at work (Leonardi 2014; Leonardi 2015; Leonardi et al. 2013). Direct exposure to instrumental knowledge is viewed as a significant mode of social learning in organizations (Huber 1991; Leonardi et al. 2013), which facilitates instrumental social relationship-building among employees. Metaknowledge is an important source of building instrumental ties because it enables employees to be aware of topic experts, which increases the likelihood of employees seeking information and expertise from other coworkers.

Visibility affordance can also lead to expressive ties. Visibility affordance helps employees identify other coworkers with similar backgrounds, interests and activities (Treem and Leonardi 2012). Prior researchers argued that when similarities (e.g., common interests, similar values and shared experience) are observed among exchange partners, they are more likely to understand, be more attracted to and have empathy for, one another (Lee et al. 2001), and subsequently increase closeness and thus grant more favors to one another (Lee et al. 2001). Zeng and Wei (2013) further indicated that the formation of social ties is often driven by similar interests and activities. Therefore, we hypothesize:

H1. *Visibility affordance is positively related to instrumental ties.*

H2. *Visibility affordance is positively related to expressive ties.*

3.2. The Effect of Association Affordance on Instrumental and Expressive Ties

Association affordance helps employees to get to know one another better inside an organization and allows them to locate experts (Ellison et al. 2014). Association affordance provides social context awareness, which is useful in staying up-to-date with the activities of coworkers and offers employees the opportunity to communicate task-related information (Ellison et al. 2014), thus aiding instrumental ties. Association affordance also provides an approach for employees to view the explicit connections among content and projects, which enables employees to access relevant information (Treem and Leonardi 2012). Moreover, the possibilities provided by association regarding the source and usefulness of information can foster collaborative forms of working (Mettler and Winter 2016), which increases the likelihood of establishing instrumental connections among employees.

Association affordance can also foster expressive ties. Ellison et al. (2014) indicated that it provides opportunities for employees to communicate more social information, which results in a more affective social connection. The association afforded by the ESM can bridge individual employees, supplement existing relationships, and form a broader sense of social interdependence (Treem and Leonardi 2012). Thus, increased association affordance is associated with the increased closeness among existing and new relationships (Treem and Leonardi 2012). Increased personal and professional closeness creates affective social relations and strong friendships among employees. Therefore, we hypothesize:

H3. *Association affordance is positively related to instrumental ties.*

H4. *Association affordance is positively related to expressive ties.*

3.3. The Effect of Editability Affordance on Instrumental and Expressive Ties

Editability affordance allows employees to deliberate over what they want to convey and to clarify their points (Treem and Leonardi 2012). In particular, editability affordance encourages more purposeful sharing of task-related information with particular audiences, which enhances the quality of shared information (Arazy et al. 2009; Mettler and Winter 2016). Treem and Leonardi (2012) also proposed that edibility affordance can result in better collaboration among employees. Thus, editability affordance, such as that implemented in open-editing, helps employees control how their content is viewed by others, which increases instrumental ties.

Editability affordance can also facilitate better expressive ties. Ellison and Vitak (2015) argued that editability affordance increases opportunities for social relationship-building in the workplace. Given that editability affordance helps improve the quality of shared information (Arazy et al. 2009; Mettler and Winter 2016), employees can better communicate social information with one another. Editability affordance encourages employees to focus on the form of the content they would like to convey (Treem and Leonardi 2012). Thus, employees can strategically manipulate the ways that personal feelings are shared with others (Treem and Leonardi 2012). Hence, employees can receive social support and care from others, which might enhance friendships among coworkers. ESM provides employees with an approach to know one another better and consequently develop more affective relations by allowing the open-editing of content. Therefore, we hypothesize:

H5. *Editability affordance is positively related to instrumental ties.*

H6. *Editability affordance is positively related to expressive ties.*

3.4. The Effect of Persistence Affordance on Instrumental and Expressive Ties

Persistence helps the transmission of instrumental knowledge and complex ideas among employees (Clark and Brennan 1991). If previous communication is recorded, then the presentations of information can be properly contextualized, and employees can better

understand conversations (Treem and Leonardi 2012). Having a record of previous information may help employees to better communicate task-related information. Leonardi et al. (2013) also indicated that persistence affordance expands the instrumental networks of the employees from whom they can learn across the organization, thus leading to increased opportunities for social learning in organizations.

Persistence affordance is also useful to enhance the expressive ties of employees. Choi et al. (2010) highlighted that persistence affordance supports socialization within an organization. This affordance leaves a trace that employees may access at various times, which provides a valuable channel for employees to appreciate and learn about the concerns and emerging issues of other coworkers. Thus, employees are more likely to give social support to each other. In addition, Treem and Leonardi (2012) also indicated that persistence affordance enables employees to reuse previous content created by other coworkers that they had friended on the ESM technology. The reuse of content in ESM also supports and strengthens the formation of tighter social relationships among employees (Treem and Leonardi 2012). Therefore, we hypothesize:

H7. *Persistence affordance is positively related to instrumental ties.*

H8. *Persistence affordance is positively related to expressive ties.*

3.5. The Effect of Instrumental Ties on In-Role and Innovative Job Performance

Instrumental actions enabled by instrumental ties are crucial to higher in-role and innovative job performance (Wu 2013). Instrumental ties can facilitate the improvement of in-role job performance in three important ways. First, instrumental ties provide employees with access to valued work-related resources (Wu 2013) that can improve the in-role work performance of an employee (Ali-Hassan et al. 2015; Sparrowe et al. 2001). Second, strong instrumental ties help employees know where to obtain expertise and useful resources to solve difficult work-related problems and thus produce high-quality work (Cross and Cummings 2004; Wu 2013). Finally, the closer and stronger the instrumental network ties, the easier it is to access and observe normative work information and work behavior (Ali-Hassan et al. 2015).

At the same time, instrumental ties can lead to greater innovative job performance of employees. Accessing information expeditiously is vital to performing current job-related tasks as well as looking for new opportunities. Ali-Hassan et al. (2015) proposed that instrumental ties promote innovation because more instrumental ties can expose employees to a larger amount of external ideas and to the identification of coworkers with complementary knowledge. Therefore, we hypothesize:

H9. *Instrumental ties are positively related to in-role job performance.*

H10. *Instrumental ties are positively related to innovative job performance.*

3.6. The Effect of Expressive Ties on In-Role and Innovative Job Performance

Prior research indicated that expressive ties are associated with higher in-role and innovative job performance (Ali-Hassan et al. 2015). On the one hand, expressive ties can help build stronger personal relationships (Wu 2013). Through informal exchange, employees are more likely to provide support or assistance to each other to solve problems and avoid work crises (Zhong et al. 2012). Employees with dense expressive ties also engage in social communication, emotional intimacy and attachment that may generate friendship (Gibbons 2004). Friends can offer information that helps employees increase the quality of their work performance (Wu 2013).

On the other hand, expressive ties may enhance innovation rates and it has been found that high-performing employees have effective friendship and business networks (Davenport 2008). Expressive ties can lead to innovation because of frequent social interactions and familiarity with

other coworkers (Ali-Hassan et al. 2015). Socialization encourages employees to share their mental models and intricate technical experience through observation, imitation and practice (Ali-Hassan et al. 2015; Amar and Juneja 2008). In addition, by socializing informally with other coworkers, employees are more likely to encounter new ideas and opportunities serendipitously (Wu 2013), leading to positive outcomes such as increased innovative work performance. Therefore, we hypothesize:

H11. *Expressive ties are positively related to in-role job performance.*

H12. *Expressive ties are positively related to innovative job performance.*

4. Research Methodology

4.1. Measurement Development

A survey was designed to collect data to test and validate the proposed model. All measurement items were adapted from existing validated scales. Some items were slightly changed to fit the current research context. All survey items were measured through a seven-point Likert scale. Table 1 lists the measurement items and their sources.

Given that this research was conducted in China, we followed the translation committee approach as suggested by Van de Vijver (1997). We first translated the questionnaire from English to Chinese. Then, three researchers from different backgrounds (i.e., management, information systems and computer science) were invited to join the committee. Prior to starting the translations, we provided a brief introduction of the research purpose and construct definitions. The three researchers independently translated the English questionnaire into Chinese. When they completed the translation, we discussed the results with these three researchers item-by-item to create consensus on each item. Next, to ensure that the Chinese questionnaire was equivalent to the English version, a professional translator, who was unfamiliar with this research, was hired to translate the Chinese questionnaire back to English. After comparing the translated questionnaire and the original English version, we found no significant semantic discrepancies. Finally, we distributed the original Chinese questionnaire to two professionals in the surveyed companies for further comments and suggestions. We further interviewed each of them after receiving their finished questionnaire. We obtained valuable feedback on the instrument, including the length of the questionnaire, wordings and appropriateness and sensitivity of the questions. We then made several modifications on the basis of the feedback.

----------Insert Table 1 about here----------

4.2. Data Collection

To collect data for this research, we cooperated with Chinese Software (a pseudonym), a large software development firm with over 7000 employees headquartered in Southern China. In late 2011, Chinese Software began to develop an ESM technology for small and medium-sized enterprises. The ESM technology, which was called "Circle," looked nearly identical to publicly available social media technologies such as Twitter and Weibo. It contained news feeds, algorithms for suggesting new contacts and profile pages. Unlike public social media technologies, it also included a shared document repository where items could be edited, tagged and linked to a user's news feed. The default settings for "Circle," which Chinese Software left unchanged, allowed anyone to see communications between any other users on the technology. Circle was used by more than 20 million users across multiple companies in China by the end of 2016.

The survey was promoted for two months in 2016 by using a customer list provided by the Chinese Software. In this list, we randomly selected and sent out our online survey hyperlink to

1000 panel members who were registered as employees. To encourage responses, a payment of RMB 15–20 (approximately US$2.17–2.89) was provided as an incentive for each respondent. As a result, we received 280 useable responses. All the questions needed to be answered before submitting the questionnaire, and no missing or incomplete responses were obtained. However, we dropped 29 questionnaires from the pool because all the items were answered with the same value. Thus, 251 valid responses were received. Table 2 shows the respondent demographics.

----------Insert Table 2 about here----------

To test for nonresponse bias, we followed the suggestions by Armstrong and Overton (1977). We used two-tailed t-tests to compare responses between the early (first 25 percent) and late (last 25 percent) respondents for all constructs including the control variables. No significant differences were found, suggesting that nonresponse bias was not an issue.

5. Data Analysis and Results

5.1. Data Analysis Technique

We used partial least squares (PLS) to test the research model. PLS is a preferred technique due to several advantages. First, PLS can evaluate the loadings on constructs and assess the causal relationships among those constructs (Sun et al. 2012). Second, PLS depends on a component-based strategy instead of requiring interval scales or multivariate normal distributions (Teo et al. 2003). Third, the model variance can be maximally explained through the constructs, thus it is robust with fewer statistical identification issues (Teo et al. 2003).

5.2. Common Method Bias

Common method bias can occur when the data of the study were collected from a single source at the same time and through the same form (here, perceptual survey responses). Thus, the following tests were conducted to examine this issue. First, we employed Harman's single-factor test to evaluate these eight conceptual variables (Podsakoff and Organ 1986), finding that seven constructs had eigenvalues higher than 1.0, explaining 63.6 percent of the total variance. The first construct accounted for 14.0 percent of the variance. Thus, this suggests that the results were not contaminated by common method bias.

Second, following the suggestions of Podsakoff et al. (2003) and Williams et al. (2003), a common method factor comprising all the principal indicators of the constructs was included in the PLS model. Then, we calculated how the variance of each indicator was substantively explained by the method factor and all principal constructs. Table 3 shows that the average substantive construct explained 63 percent of the variance, whereas the average method-based variance of the indicators was 1 percent. The ratio of the average substantively explained variance of the indicators and the average method-based variance of the indicators was very large. In addition, most of the method factor loadings were insignificant, suggesting that common method bias was not a concern.

----------Insert Table 3 about here----------

5.3. Measurement Model

To evaluate the measurement model, we tested the reliability and validity of the constructs (Carmines and Zeller 1979). The reliability of the constructs was assessed using Cronbach's alpha and composite reliability as suggested by Fornell and Larcker (1981). As shown in Table 4, composite reliability ranged from 0.86 to 0.91 and Cronbach's alpha ranged from 0.72 to 0.89. These values were above 0.7, indicating good reliability (Fornell and Larcker 1981). The validity of the constructs was further tested through convergent and discriminant validities. Convergent validity was assessed by checking the loadings and average variance extracted (AVE). Table 4 shows that the values of AVE ranged from 0.52 to 0.78, which were higher than the threshold of

0.5 (Fornell and Larcker 1981). In addition, the values of all the loadings of the items were above the recommended score of 0.6 (Carmines and Zeller 1979). These results demonstrated good convergent validity of the measurement model.

----------Insert Table 4 about here----------

Furthermore, multiple techniques were used to assess discriminant validity. First, the chi-square difference test confirmed that the correlations between each pair of constructs were significantly different from unity (i.e., 1.0) (Jöreskog 1993). Second, we calculated and compared the square root of AVE of each construct and the correlations among constructs. The square roots of AVEs for all constructs were greater than the correlations among constructs (Fornell and Larcker 1981). In addition, the correlation matrix in Table 5 indicated that the largest correlation was 0.59, which was less than the recommended value of 0.71 (MacKenzie et al. 2011). These results suggested good discriminant validity of the measurement model.

----------Insert Table 5 about here----------

5.4. Structural Model

PLS was used to test the structural model. We assessed the path significance through the bootstrapping resampling method with 500 resamples and 251 cases per sample. Figure 2 presents the results of the full structural model. The model explained 45 percent of the variances in instrumental ties, 35 in expressive ties, 38 in-role job performance and 32 in innovative job performance.

----------Insert Figure 2 about here----------

First, we examined the relationship between ESM affordances and social network ties. As shown in Figure 2, visibility affordance ($\beta = 0.16$, $p < 0.05$), association affordance ($\beta = 0.20$, $p < 0.05$), editability affordance ($\beta = 0.17$, $p < 0.05$) and persistence affordance ($\beta = 0.30$, $p < 0.01$) had positive and significant influences on instrumental ties. Thus, H1, 3, 5 and 7 were supported. In addition, association affordance ($\beta = 0.18$, $p < 0.05$) and editability affordance ($\beta = 0.31$, $p < 0.001$) had positive and significant influences on expressive ties. Therefore, H4 and 6 were supported. However, neither visibility nor persistence affordances positively affect expressive ties. Thus, H2 and 8 were not supported.

Second, we examined how each of the two types of social network ties influenced job performance. Instrumental ties significantly affect in-role job performance ($\beta = 0.46$, $p < 0.001$) and innovative job performance ($\beta = 0.280$, $p < 0.001$), supporting H9 and 10. The paths from expressive ties to in-role job performance ($\beta = 0.20$, $p < 0.01$) and to innovative job performance ($\beta = 0.34$, $p < 0.001$) were also positive and significant, supporting H11 and 12. Furthermore, we used the method suggested by Pavlou and Dimoka (2006) to compare the PLS path coefficients between the different types of social network ties and in-role and innovative job performance. The results indicated that instrumental ties exerted a stronger effect on in-role job performance ($t = 4.97$, $p < 0.001$) compared with that of expressive ties. However, expressive ties exerted stronger effects on innovative job performance ($t = 6.60$, $p < 0.001$) compared with that of instrumental ties.

Finally, none of the control variables had significant effects on in-role or innovative job performance.

Overall, the R^2 values for all dependent variables and the high factor loadings yielded an adequate goodness-or-fit for the research model.

Table 6 summarizes the hypothesis tests.

----------Insert Table 6 about here----------

5.5. Post Hoc Analyses

To verify the validity of the theoretical model, the author further performed additional analyses and robustness checks. The author examined whether instrumental and expressive ties mediated the effects of visibility, association, editability, and persistence affordances on in-role and innovative job performances. Specifically, following recommendations by MacKinnon et al. (2004), the bootstrapping sampling method (bootstrap sample size = 5000) was used to generate asymmetric confidence intervals (CIs) for the indirect effect. Compared with traditional approaches such as the Sobel test, the bootstrapped CIs method generates a more accurate estimation of the indirect effect because it can produce asymmetric CIs for the indirect effect using the respective distribution of the two regression coefficients making up the product term. Preacher and Hayes (2008) claimed that an indirect effect is significant when the 95 percent CI do not contain zero.

As shown in Table 7, the results of indirect effects indicated that instrumental ties mediated the positive effects of visibility, association, editability, and persistence affordances on in-role job performance. The indirect effect was 0.048, 0.062, 0.049, and 0.084 (the 95 percent CI of the indirect relationship was [0.009, 0.110], [0.018, 0.147], [0.005, 0.107], and [0.030, 0.180], respectively, which excluded zero); similarly, the results indicated that instrumental ties mediated the positive effects of visibility, association, editability, and persistence affordances on innovative job performance. The results also indicated that expressive ties mediated the positive effects of association, editability, and persistence affordances on in-role job performance. The indirect effect was 0.026, 0.035, and 0.023 (the 95 percent CI of the indirect relationship was [0.003, 0.078], [0.009, 0.078], and [0.001, 0.073], respectively, not containing zero). However, the results indicated that expressive ties did not mediate the positive effects of visibility and persistence affordances on in-role job performance. In addition, expressive ties mediated the positive effects of association and editability affordances on innovative job performance. However, expressive ties did not mediate the positive effects of visibility and persistence affordances on innovative job performance.

----------Insert Table 7 about here----------

Furthermore, it is likely ESM affordances have direct and positive effect on employee performance (Odoom et al. 2017). Therefore, although these relationships are not hypothesized, they are still tested in the research model to ensure the theoretical completeness (see Figure 3). The results show that only editability affordance has positive effect on innovative job performance.

----------Insert Figure 3 about here----------

6. Discussion and Implications

6.1. Discussion

This research explores how different types of ESM affordances (i.e., visibility, association, editability and persistence) exert different effects on employee social network ties (instrumental and expressive), which in turn influence their job performance (in-role and innovative). The research results support most of the hypotheses.

This research includes several key findings. First, visibility affordance exerts a significant effect on instrumental ties, but, surprisingly, not on expressive ties. A possible explanation is that ESM provides employees visibility into the online daily communication occurring among their coworkers, which allows employees to be better aware of task-related information (Leonardi and Meyer 2014). However, expressive or affective ties may be often based on social exchange of personalized care, which and favor offline interactions (Lee et al. 2001). Additionally, the visibility afforded by ESM may also exacerbate differences that induce conflict among

employees, which results in the dangers of balkanization with minimal social interaction among individual or groups of coworkers (Leonardi et al. 2013).

Second, persistence affordance is also positively related to instrumental ties but not with expressive ties. One plausible explanation is that persistence affordance may lead to more selective self-presentation (Ellison et al. 2014; Walther 2007) because it makes surveillance activities much easier to accomplish as social-related information is stored, searched and aggregated (Treem and Leonardi 2012).

Furthermore, although instrumental and expressive ties positively affect in-role and innovative job performance, instrumental ties exert stronger effects on in-role job performance than do expressive ties, whereas expressive ties exert stronger effects on innovative job performance than do instrumental ties. This is because instrumental ties are often used to exchange work-related information, whereas expressive ties may provide more emotional support for innovation (Ali-Hassan et al. 2015). This finding also demonstrates the necessity of distinguishing job performance into in-role and innovative aspects.

6.2. Limitations and Suggestions for Future Research

The results should be interpreted by taking several limitations into consideration because they open up interesting opportunities. First, this research focuses on the paths from four facets of ESM affordances to social network ties. These four facets may also affect each other. For instance, Flyverbom et al. (2016) argued that visibility affordance may be a significant predictor of persistence, editability and association affordances. The measurement model in Rice et al. (2017) shows that indeed they are intercorrelated. Therefore, future research can examine whether there are higher-order affordance factors (as reviewed in (Rice et al. 2017)).

Second, the research model includes relatively few explanatory variables; thus there may be other exogenous factors affecting the model's relationships. Future research can examine additional possible explanations for the relationships between ESM affordances, social network ties and job performance (e.g., task complexity); explore a broader range of Chinese explanatory factors (e.g., face and trust).

Third, this research examines ESM affordances that are positively associated with the individual employee job performance. Future research can identify ESM affordances that negatively affect employee behavior. For example, when ESM enables invisible information to become visible, employees may become fearful of surveillance by leaders or other coworkers, thus reducing knowledge sharing (Leonardi 2014).

6.3. Theoretical Implications

The current study provides several important theoretical implications. First, the present research offers a more fine-grained insight into affordance theory in ESM contexts by providing quantitative, multivariate empirical evidence. Affordance theory has been used by researchers to better understand different technologies (Grgecic et al. 2015; Koroleva and Kane 2017; Sheer and Rice 2017). Researchers have recently found that affordance theory contributes to an in-depth understanding of the ESM usage behavior of employees in the workplace (Leonardi et al. 2013; Treem and Leonardi 2012) and has gained increasing popularity in the IS literature (Koroleva and Kane 2017; Leonardi 2011; Sheer and Rice 2017). The empirical results of this research offer preliminary evidence for the theoretical propositions made by Rice et al. (2017) and Treem and Leonardi (2012).

Second and more specifically, this is the first empirical research to integrate affordance theory and social network perspective in one study. Previous research on social network theory has identified that social networks can generate benefits that ultimately affect employee job

performance (Ali-Hassan et al. 2015; Wu 2013). However, it is difficult to determine, from prior network studies, whether these social networks can be strategically and intentionally developed. Fortunately, the exponential growth in ESM provides an unprecedented opportunity for employees to actively manage their social connections (Wu 2013). Wu (2013) argued that ESM in general can induce a change in the social networks of the employees, and this study supports that conclusion, but extends it through specific types of affordances and types of network ties.

Third, this research provides support for the nomological validity of treating social network ties as instrumental and expressive aspects in ESM contexts. Specifically, our results indicate that these four types of ESM affordances affect instrumental and expressive ties differently. Furthermore, these two types of social network ties have significantly different influences on in-role and innovative job performance. Previous studies on social network benefits enabled by ESM often considered only general network ties, or one kind of tie, in their theoretical arguments and empirical analyses (Lu et al. 2015). The categorization of instrumental and socio-emotional communications is salient in ESM contexts (Ali-Hassan et al. 2015). In this regard, the distinction between different types of social network ties can enhance the current understanding of the role of social networks in ESM contexts and provide nuanced insights into the extant research on ESM. Furthermore, the findings further confirm that the different aspects of ESM affordances on employee job performance are mediated through instrumental and expressive ties (see Table 7). Our findings suggest that in ESM contexts, ESM affordances are not enough to improve employee job performance; rather, instrumental and expressive ties are the means by which ESM affordances are more likely to contribute to employee in-role and innovative job performance.

Finally, in this study we collected data in China. Few studies on ESM have been undertaken in China, so this represents an important new contribution to the ESM literature.

6.4. Practical Implications

This research also provides some guidelines in terms of practical implications. First, the results suggest that an ESM can serve as a vehicle to enhance employee job performance, yet encouraging and building the necessary instrumental and expressive ties among employees through their ESM use remains a challenge for managers. Managers should realize that although instrumental and expressive ties can help improve in-role and innovative job performance, instrumental ties are the (somewhat) better choice to enhance instrumental job performance while expressive ties are the prior choice to enhance innovative job performance.

Second, the results recommend CIOs to strategically improve the awareness and use of ESM affordances according to their different focus on instrumental or expressive ties. If CIOs are interested in promoting instrumental ties among employees, then providing visibility, association, editability and persistence affordances of ESM is important. Specifically, to enhance visibility and association affordances, CIOs should make allowing maximum use of each of these affordances the default settings for organization's ESM, thereby allowing any employee who uses it to see any other coworker's profile and view communications occurring between any other coworkers via the ESM. In addition, given the importance of editability affordance, CIOs may enable the permission to revise content on the ESM technology (while retaining prior versions, a form of pervasiveness affordance, as well as linking those changes to rationales or related resources, a form of association affordance). CIOs can enhance the persistence affordance of ESM by allowing the retrieval or display of previous activities of employees on the ESM technology. If CIOs wish their employees to focus on developing expressive ties, then they must enhance the association and editability affordances of ESM. CIOs should leverage ESM

affordances for developing instrumental and expressive ties among employees to improve employee in-role and innovative job performance.

Third, for individual employees who tend to improve their in-role job performance, they should leverage the visibility, association, editability and persistence affordances to enhance their instrumental ties with their coworkers. For example, the employees can use ESM to see other coworkers' answers to other coworkers' questions. They can also use ESM to find information about prior projects. For employees who want to improve their innovative job performance, they should leverage the association and editability affordances to enhance their expressive ties with their coworkers. For example, the employees can use (web)links on ESM from information they know to find new information they did not know. They can also use ESM to create or edit a document collaboratively with their coworkers.

7. Conclusion

Recently, researchers have highlighted the importance of considering the role of ESM affordances in the workplace. However, the influence of ESM affordances on employee job performance is unclear. The research findings indicate that visibility, association, editability and persistence affordances are positively associated with instrumental ties. However, only the association and editability affordances are positively associated with expressive ties. Instrumental ties are found to exert stronger effects on in-role job performance compared with expressive ties, whereas expressive ties exert stronger effects on innovative job performance compared with instrumental ties. Collectively, these findings suggest possibilities for improving employee job performance through the use of ESM, particularly via affordances and social network ties. This research also sets a starting point for future studies and practice to further consider the importance of using affordance and network perspectives in ESM contexts.

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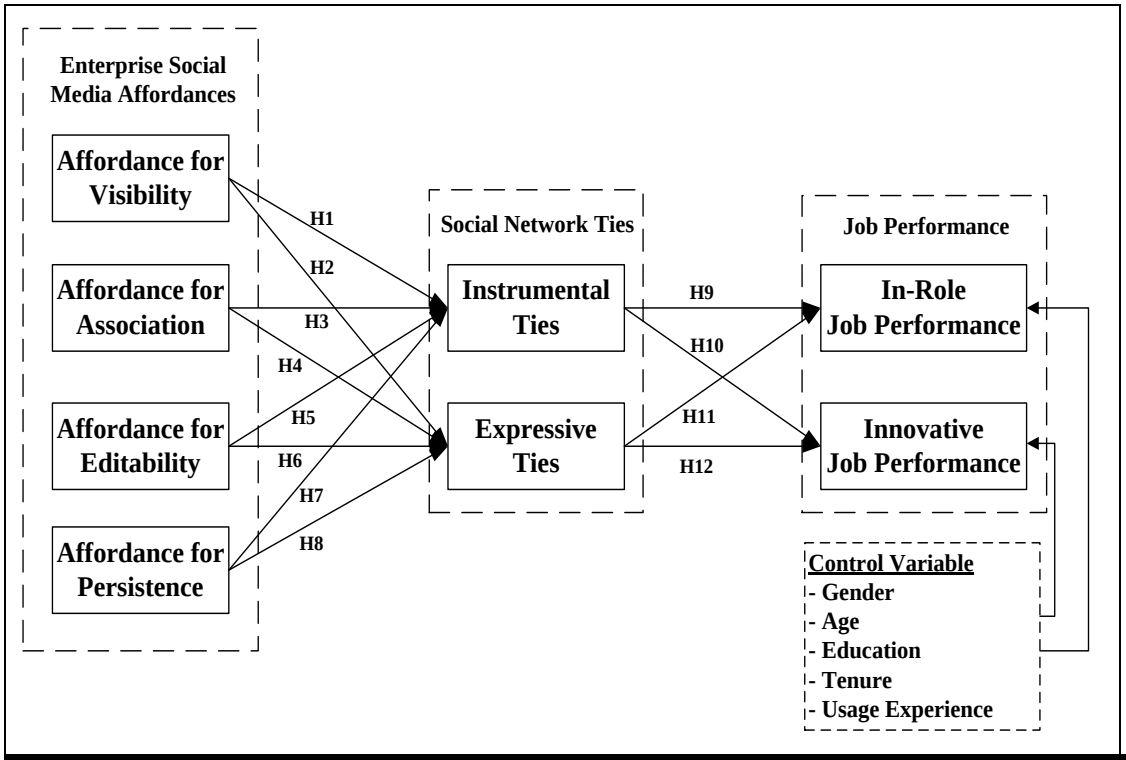

Figure 1. Research Model

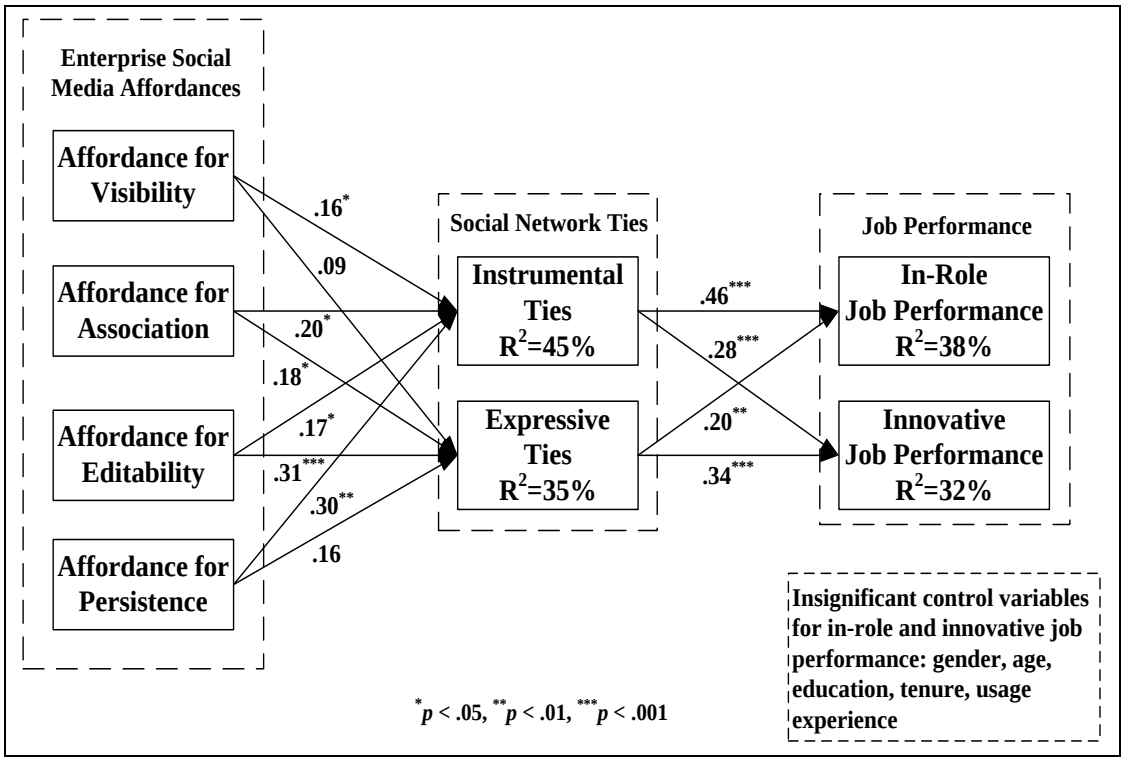
Enterprise Social Media Affordances
Affordance for Visibility
Affordance for Association
Affordance for Editability
Affordance for Persistence
.16*
.09
.20*
.18*
.17*
.31***
.30**
.16
Social Network Ties
Instrumental Ties R2=45%
Expressive Ties R2=35%
.46***
.28***
.20**
.34***
Job Performance
In-Role Job Performance R2=38%
Innovative Job Performance R2=32%
Insignificant control variables for in-role and innovative job performance: gender, age, education, tenure, usage experience
*p < .05, **p < .01, ***p < .001

Figure 2. Research Model Results

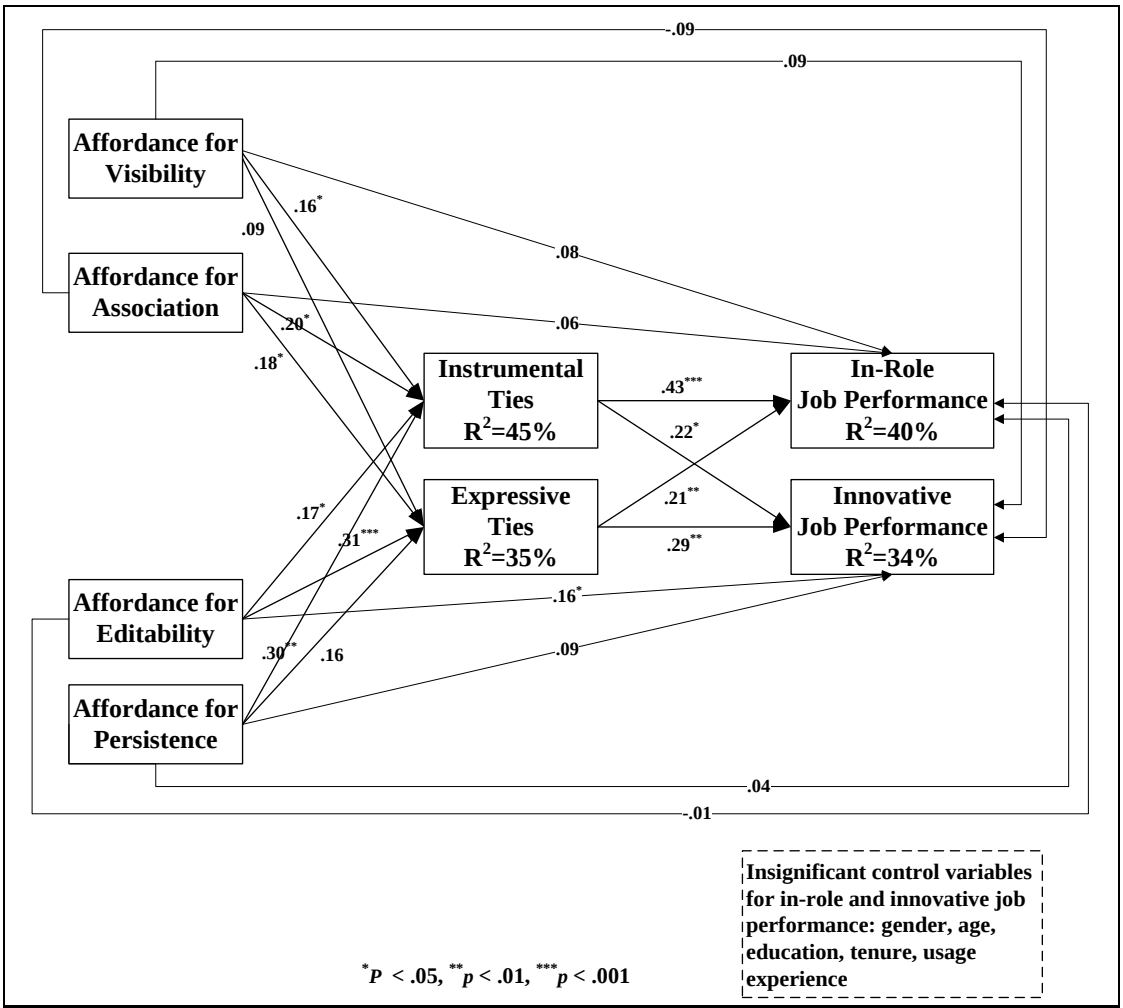

Figure 3. Additional Test Results

Table 1. Measurement Items		
Constructs	**Items**	**Sources**
Visibility Affordance	1. Enterprise social media enables me to see other coworkers' answers to other coworkers' questions.	Rice et al. (2017)
	2. Enterprise social media enables me to see who has interactions with particular coworkers.	
	3. Enterprise social media enables me to see the number of others who have linked to the same content.	
Association Affordance	1. Enterprise social media enables me to use (web)links from information I know or am aware of, to find new information I did not know or wasn't aware of.	Rice et al. (2017)
	2. Enterprise social media enables me to use (web)links from coworkers I know or am aware of, to find new coworkers I did not know or wasn't aware of.	
Editability Affordance	1. Enterprise social media enables me to edit coworkers' information after they have posted it.	Rice et al.(2017)
	2. Enterprise social media enables me to edit my information after I have posted it.	
	3. Enterprise social media enables me to create or edit a document collaboratively.	
Persistence Affordance	1. Enterprise social media enables me to find information about prior projects.	Rice et al. (2017)
	2. Enterprise social media enables me to maintain relations with others at my company despite changes in activities, work, or location.	
	3. Enterprise social media enables me to have my information or comments stay available after I post them.	
Instrumental Ties	1. I am often involved with coworkers for receiving or sending information for coordination, control, planning or evaluation.	Manev and Stevenson (2001) and Zhong et al.(2012)
	2. I am often involved with coworkers for receiving or sending technical assistance.	
	3. The contacts among my coworkers and me are important for my work.	
	4. My coworkers and I are involved with each other for work related advice and suggestion.	
Expressive Ties	1. I am well acquainted personally with my coworkers.	Manev and Stevenson (2001) and Zhong et al.(2012)
	2. I talk with coworkers about things beyond work.	
	3. I consult my coworkers for personal matters.	
	4. My coworkers and I build good friendships with each other.	
In-Role Job Performance	To what extent do you agree or disagree with the following?	Janssen and Van Yperen
	1. I always complete the duties specified in my job description.	
	2. I always meet all the formal performance requirements of my job.	

	3. I always fulfill all responsibilities required by my job.	(2004)
	4. I never neglect aspects of the job that I am obligated to perform.	
	5. I always perform essential duties.	
Innovative Job Performance	How often do you perform the following work activities?	Janssen and Van Yperen (2004)
	1. Creating new ideas for improvements	
	2. Mobilizing support for innovative ideas	
	3. Searching out new working methods, techniques, or instruments	
	4. Acquiring approval for innovative ideas	
	5. Transforming innovative ideas into useful applications	
	6. Generating original solutions to problems	
	7. Introducing innovative ideas in a systematic way	
	8. Making important organizational members enthusiastic for innovative idea	
	9. Thoroughly evaluating the application of innovate ideas	

Table 2. Demographics of Respondents (the Number of Subjects=251)	
	Percentage
Gender	
Male	54.6
Female	45.4
Age	
18-25	40.2
26-30	36.7
31-35	18.7
36-40	2.0
41 and above	2.4
Education	
High school or below	12.7
College	26.7
University	54.7
Graduate school or above	6.4
Position	
Non-management employee	69.7
Manager	20.3
Senior or executive manager	4.0
Others	6.0
Tenure (years)	
Under 1 year	14.7
1–2 years	22.3
3–5 years	39.4
6–10 years	16.8
Over 10 years	6.8
ESM Usage Experience	
Under 1 year	44.2
1–2 years	37.8
3–4 years	15.6
Over 4 years	2.4

Table 3. Common Method Bias Analysis					
Construct	**Indicator**	**Substantive Factor Loading (R_1)**	**R_1^2**	**Method Factor Loading (R_2)**	**R_2^2**
VA	VA1	.88***	.77	−.04	.00
	VA2	.91***	.82	−.11*	.01
	VA3	.72***	.52	.15**	.02
AA	AA1	.85***	.73	.05	.00
	AA2	.92***	.84	−.05	.00
EA	EA1	.89***	.79	−.11*	.01
	EA2	.76***	.58	.10*	.01
	EA3	.88***	.77	.01	.00
PA	PA1	.85***	.73	−.04	.00
	PA2	.83***	.68	−.02	.00
	PA3	.79***	.62	.05	.00
ITS	ITS1	.81***	.65	.02	.00
	ITS2	.76***	.58	.06	.00
	ITS3	.80***	.63	.02	.00
	ITS4	.85***	.73	−.10	.00
ETS	ETS1	.71***	.50	.11	.01
	ETS2	.80***	.65	−.03	.00
	ETS3	.87***	.76	−.08	.01
	ETS4	.82***	.67	.00	.00
IRJP	IRJP1	.74***	.547	.06	.00
	IRJP2	.69***	.47	.07	.01
	IRJP3	.86***	.74	−.11	.01
	IRJP4	.74***	.55	.07	.01
	IRJP5	.82***	.67	−.09	.01
IJP	IJP1	.73***	.54	−.04	.00
	IJP2	.68***	.46	.04	.00
	IJP3	.80***	.65	−.12	.01
	IJP4	.75***	.56	−.01	.00
	IJP5	.73***	.54	−.01	.00
	IJP6	.69***	.48	.07	.01
	IJP7	.69***	.47	.03	.00
	IJP8	.69***	.48	.03	.00
	IJP9	.73***	.54	.01	.00
Average		**.79**	**.63**	**.05**	**.01**
Note: * $p < .05$, ** $p < .01$, *** $p < .001$					

Table 4. Results of Confirmatory Factor Analysis					
Construct	**Items**	**Loading**	**Cronbach's Alpha**	**Composite Reliability**	**Average Variance Extracted**
Visibility Affordance (VA)	3	.85	.79	.87	.70
		.81			
		.85			
Association Affordance (AA)	2	.89	.72	.88	.78
		.88			
Editability Affordance (EA)	3	.79	.79	.88	.71
		.85			
		.89			
Persistence Affordance (PA)	3	.81	.76	.86	.68
		.82			
		.83			
Instrumental Ties (ITS)	4	.83	.82	.88	.65
		.82			
		.80			
		.77			
Expressive Ties (ETS)	4	.81	.81	.88	.64
		.78			
		.81			
		.82			
In-Role Job Performance (IRJP)	5	.78	.83	.88	.59
		.77			
		.76			
		.81			
		.73			
Innovative Job Performance (IJP)	9	.69	.89	.91	.52
		.73			
		.69			
		.75			
		.72			
		.76			
		.70			
		.71			
		.75			

Table 5. Means, Standard Deviation and Correlation.															
Variable	**Mean**	**S.D.**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
1. VA	5.68	.82	**.84**												
2. AA	5.64	.84	.56	**.89**											
3. EA	5.46	.98	.40	.55	**.84**										
4. PA	5.66	.82	.52	.57	.47	**.82**									
5. ITS	5.71	.76	.50	.56	.49	.58	**.80**								
6. ETS	5.60	.77	.39	.49	.52	.45	.60	**.80**							
7. IRJP	5.77	.68	.37	.34	.27	.40	.59	.48	**.77**						
8. IJP	5.66	.63	.34	.34	.42	.36	.48	.51	.59	**.72**					
9. Gender	NA	NA	−.08	−.03	−.02	.02	.04	.00	−.02	−.07	**NA**				
10. Age	NA	NA	−.05	−.02	−.01	−.01	−.08	−.10	−.14	−.08	−.04	**NA**			
11. Education	NA	NA	.15	−.04	−.03	.05	.02	−.00	.04	−.05	−.05	−.11	**NA**		
12. Tenure	NA	NA	−.02	−.03	−.04	.02	.02	−.01	.00	−.04	−.08	.68	−.06	**NA**	
13. Usage Experience	NA	NA	.01	−.11	−.14	−.08	−.07	−.08	−.04	−.07	.06	.22	−.01	.30	**NA**
Notes: The shaded numbers in the diagonal are the square root of the AVE. NA = not applicable.															

Table 6. Summary of Hypothesis Tests	
H1: Visibility affordance is positively related to instrumental ties.	Supported
H2: Visibility affordance is positively related to expressive ties.	Unsupported
H3: Association affordance is positively related to instrumental ties.	Supported
H4: Association affordance is positively related to expressive ties.	Supported
H5: Editability affordance is positively related to instrumental ties.	Supported
H6: Editability affordance is positively related to expressive ties.	Supported
H7: Persistence affordance is positively related to instrumental ties.	Supported
H8: Persistence affordance is positively related to expressive ties.	Unsupported
H9: Instrumental ties are positively related to in-role job performance.	Supported
H10: Instrumental ties are positively related to innovative job performance.	Supported
H11: Expressive ties are positively related to in-role job performance.	Supported
H12: Expressive ties are positively related to innovative job performance.	Supported

Table 7. Bootstrapping Methods Test								
	DV: In-Role Job Performance				DV: Innovative Job Performance			
	Instrumental Ties		Expressive Ties		Instrumental Ties		Expressive Ties	
	Indirect	CI (lower / upper)	Indirect	CI (lower / upper)	Indirect	CI (lower / upper)	Indirect	CI (lower / upper)
Visibility Affordance	.048	.009 / .110	.011	−.008 / .042	.023	.002 / .071	.013	−.012 / .053
Association Affordance	.062	.018 / .147	.026	.002 / .078	.029	.003 / .089	.032	.004 / .085
Editability Affordance	.049	.005 / .107	.046	.018 / .091	.023	.001 / .072	.057	.020 / .120
Persistence Affordance	.084	.030 / .180	.023	−.003 / .068	.040	.003 / .101	.028	−.003 / .087