



Research Note

Engaging in knowledge exchange: The instrumental psychological ownership in open innovation communities

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ABSTRACT

Online communities have become a vital channel for professionals to expand their networks and initiate new strategic collaborations. Such online behaviors have led to multiple types of innovation potential that are based on the co-creation of ideas toward new solutions. Yet, very little is known about the role of psychological ownership of knowledge in professionals' knowledge exchange in these communities that are based on voluntary contributions. We apply the psychological ownership theory and posit that psychological ownership of knowledge is instrumental to increased knowledge exchange intentions of professionals. Informed by the theory, our model incorporates several enablers of online engagement which could be associated with psychological ownership. Our exploratory quantitative study evidences that perceived ownership of knowledge plays a critical instrumental role in idea exchange behavior. We evidence how personal outcome expectations, organizational innovativeness and affective community commitment are associated with psychological ownership of knowledge which is an important predictor of intentions to exchange knowledge in open innovation communities. Implications for theory and practice are discussed.

1. Introduction

The co-creation of innovations through the expansion of networks and new strategic collaborations (Lee, Olson, & Trimi, 2012) has been rapidly moving to the online environment thanks to the advancements of information and communication technologies (ICT) (Gebauer, Füller, & Pezzeri, 2013; von Hippel, 2009). In this regard, online communities for co-creation that neither restrict participation nor are under tight corporate control have had a major impact on managing innovation (Desouza et al., 2009; von Hippel, 2009; Stock et al., 2014). Such online communities intended for co-creation have also been referred to as *open innovation communities* (Fleming & Waguespack, 2007). Consisting of a community of users sharing a passion for a certain profession or hobby, the examples of co-created solutions range from sports products (Füller, Bartl, Ernst, & Mühlbacher, 2006) to new business models and information technology (IT) solutions (Di Gangi & Wasko, 2009).

As Fleming and Waguespack (2007, p. 165) argued, “open innovation communities typically lack financial or corporate backing, forgo personal ownership rights to their members' work, rely on volunteers,

and eschew formal planning and management structures.” Co-creation is highly dependent on the contributors' fluidity, devotion, and perceptions of ownership of the collective outputs being created during the exchange of ideas (Faraj, Kudaravalli, & Wasko, 2015; McAdam & McClelland, 2002). Cross-disciplinary research on perceived ownership has shown how individuals develop feelings of ownership toward a variety of objects, such as ideas and the knowledge they possess (Isaacs, 1933; Li, Yuan, Ning, & Li-Ying, 2015; Pierce, Kostova, & Dirks, 2003). Theory of psychological ownership suggests that such a psychological state of ownership is influenced by situational and individuals factors and steers individuals' behavior (Pierce, Kostova, & Dirks, 2001). Indeed, individuals' cognitive or perceived ownership¹ has been demonstrated to tremendously influence manifested behaviors in collaborative settings (Ford & Staples, 2010; Li et al., 2015; Pierce et al., 2003). Psychological ownership of knowledge could therefore be instrumental, and have an essential role in the knowledge exchange behavior of professionals in open innovation communities once psychological ownership is perceived.

The situational and individual factors behind psychological ownership of knowledge and its potential instrumental role remain

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unaddressed in open innovation community context. In fact, previous knowledge ownership studies have mainly addressed the extent to which individuals perceive certain knowledge belonging to the organization (Jarvenpaa & Staples, 2001) or the extent to which individuals feel ownership of certain IT (Barki, Paré, & Sicotte, 2008). Only a handful of studies have linked psychological ownership of knowledge to online knowledge exchange behavior. Researchers have identified the willingness to share knowledge as one of the positive effects of perceived ownership (Ford & Staples, 2010; Wasko & Faraj, 2000). Thus, the understanding regarding the situational and contextual factors (Jarvenpaa & Staples, 2000; Pierce et al., 2003) that could explain the instrumental role of psychological ownership remains in an early state. Our study is positioned on this gap in the research.

Our study has two objectives: 1) to understand the situational and individual enablers behind psychological ownership and 2) to investigate the instrumental role of psychological ownership between the enablers of psychological ownership and knowledge exchange intentions. We draw from the psychological ownership theory (Pierce et al., 2001) because it could explain the instrumental role of psychological ownership on knowledge exchange intentions in open innovation communities. As the situational and individual factors that foster psychological ownership are context-driven (Pierce et al., 2003) and psychological ownership is unlikely to emerge without devotion and engagement with the ownership targets (Pierce et al., 2001), we investigate several factors that are associated with increased engagement in open innovation communities and position them as potential enablers of psychological ownership. While our study is informed by the psychological ownership theory, we draw the context-specific enablers of engagement from knowledge exchange literature.

We conducted a quantitative study based on the surveys collected from 205 professionals, contributing to varying open innovation communities. In particular, our study addresses the co-creation phase of ideation, commonly referred to as “idea generation,” which researchers have argued is the core aspect of co-creation in innovation processes (Desouza et al., 2009; Stock et al., 2014). In terms of theoretical contributions, the study 1) validates the instrumental role of psychological ownership of knowledge in the online community context; 2) uncovers enablers of psychological ownership and 3) provides evidence for the positive effect of psychological ownership on exchange intentions in open innovation communities. As the co-creation practices in an open ecosystem are becoming increasingly important (Desouza et al., 2009; Echeverri & Skalen, 2011), the findings of this article advance the understanding of professionals’ contribution behavior online and provide an explanation for the unmapped psychological state of knowledge ownership.

The article is structured as follows. First, we lay the groundwork for the types of communities and co-creative settings under investigation. We then explain the instrumental perspective to psychological ownership of knowledge and proceed to extracting the relevant enablers of psychological ownership. By doing so, we present the theoretical model of our study and provide several hypotheses for testing the model. The third section of the article explains the procedures and methods to operationalize our theoretical model and the efforts made to collect and analyze the data. The remainder of the article discusses the relevance and importance of the evidenced results.

2. Theoretical background and hypotheses development

This section provides information on the key literature related to our research topic and builds the theoretical framework, which is subsequently validated in the study.

2.1. Co-creation in open innovation communities

Idea generation in online communities has been argued as a key activity of innovation processes (Desouza et al., 2009; Stock et al.,

2014). Such co-creation of ideas in online communities can take place in discussions where the proposed ideas are challenged, iterated, piloted, and exchanged until the resulting innovations are achieved (Desouza et al., 2009; Franke & Shah, 2003). While ideation can take place in physical sites established by organizations, it is as likely that online communities and the resulting innovations form wherever users interact around a particular theme and common interest (Füller, Mühlbacher, Matzler, & Jawecki, 2010), for example, in open innovation communities.

Open innovation communities are multifold and include the following: 1) communities established for one common purpose (e.g., an Internet engineering task force (Fleming & Waguespack, 2007) consisting of unpaid, informal workers who aim to improve and maintain TCP/IP standard); 2) open source communities (Morgan, Feller, & Finnegan, 2012); and 3) open innovation alliances, such as the Open Handset Alliance that brings multiple firms together to innovate under certain rules and joint-ownership of intellectual property (Han et al., 2012). These communities often share a common profession (e.g., communities of practice, as defined by Lave & Wenger (1991), and complementary know-how is utilized to increase the potential for out-of-the-box thinking and the resulting innovations, as in case three above.

In this study, we characterize open innovation communities as 1) primarily online communities (which does not exclude co-located activities) (Han et al., 2012); 2) relying on voluntary contributions (Faraj et al., 2015); 3) including either structured or unstructured forms of collaboration with either explicitly or implicitly named leaders (Fleming & Waguespack, 2007; Han et al., 2012); and 4) emerging ad hoc and dissolving accordingly (Füller et al., 2010).

Most research on ideation relates to the creativity of individuals (Garfield, Taylor, Dennis, & Satzinger, 2001; Nunamaker, Applegate, & Konsynski, 1987), techniques and approaches for turning ideas into solutions (Dean, Hender, Rodgers, & Santanen, 2006), and technology support (e.g., group decision support systems) for ideation (Nunamaker et al., 1987; Santanen, Briggs, & Vreede, 2004) in collaborative intra- and inter-organizational settings. While the importance of online communities in innovation practice is widely recognized (Faraj et al., 2015; Füller et al., 2010; Han et al., 2012), little is known about the ownership perceptions of knowledge in open and collaborative knowledge exchange settings.

2.2. Psychological ownership of knowledge

Theory of psychological ownership considers psychological ownership as a critical component of individuals’ efforts to cherish and nurture their own possessions (Pierce et al., 2001). The targets of possessions are typically sensed as belonging to oneself, which creates motivation to devote oneself to and pursue those targets further (McDougall, 1923). This cognitive-affective state of perceived psychological ownership can be defined as the “individual’s cognitive ownership of tangible or intangible targets” (Pierce et al., 2001). Cross-disciplinary research has emphasized a variety of targets of ownership, which has tremendously increased both the scope of the concept and its causes and effects. The target of ownership can range from an organization (Constant, Kiesler, & Sproull, 1994; Jarvenpaa & Staples, 2001) or personal possessions (e.g., goods, materials) (Pierce et al., 2003) to groups and people (Avey, Avolio, Crossley, & Luthans, 2009). It has been shown that psychological ownership can also target ideas and knowledge (Isaacs, 1933; Li et al., 2015). In this study, we investigate psychological ownership of the collective output created in an open innovation community and define psychological ownership of knowledge as: “The degree to which a person perceives the open innovation communities’ knowledge output belongs to him/her”.

The theory of psychological ownership states that such perceived feelings of ownership have important outcomes that can be behavioral, emotional or psychological (Pierce et al., 2001). This theory posits that

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