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경영학 석사학위논문

Individual Psychological Needs and  
Radical versus Incremental Creativity:  
Mediating Role of Knowledge Management Behavior

개인의 심리적 욕구가 조직 구성원의  
혁신적 및 개량적 창의성에 미치는 영향:  
지식관리 행동의 매개 효과

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Abstract

# Individual Psychological Needs and Radical versus Incremental Creativity: Mediating Role of Knowledge Management Behavior

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Drawing on motive disposition theory and self-concordance model, this study identifies individual psychological needs (need for achievement, need for affiliation, and need for power) as distinct facilitators of individual radical and incremental creativity. The mediating role of employees' knowledge management behaviors (KMBs), specifically knowledge sharing and knowledge receiving, in the relationship between different dimensions of individual psychological needs and the two distinct forms of creativity is also examined with social exchange theory and norm of reciprocity as basis. In addition, this study adopts the theoretical view of trait activation theory to investigate value importance of knowledge as a moderating contingency in the relationship between individual psychological needs and KMBs. The proposed theoretical model and hypotheses were empirically

tested on the basis of data collected from 75 leaders and their immediate 209 members in Korea.

Results revealed that, among the three psychological needs, need for achievement is a significant positive predictor of incremental and radical creativity. Need for affiliation is positively related only to incremental creativity. Knowledge sharing is positively predicted by all three types of psychological needs, whereas knowledge receiving is predicted only by the need for achievement and need for affiliation. The interaction effects of value importance of knowledge and psychological needs triggers individuals' engagement in knowledge sharing and knowledge receiving. Finally, knowledge sharing and knowledge receiving are positive significant predictors of the two types of creativity.

**Keywords:** radical creativity, incremental creativity, psychological needs, knowledge sharing, knowledge receiving, value importance of knowledge

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# I. INTRODUCTION

In the contemporary business environment characterized as dynamic, competitive, and challenging, creativity in organizations has become a critical determinant of their performance, competitive advantage, and long-term sustainable growth (Amabile, 1996; Anderson, Potočnik, & Zhou, 2014). Enhancing the creative capabilities of employees has been widely recognized as a key mechanism through which organizations can substantially increase their innovation, effectiveness, and survival (Amabile, 1996; Shalley, Zhou, & Oldham, 2004; Woodman, Sawyer, & Griffin, 1993). Creativity is defined as the generation or production of ideas that are novel and useful (Amabile, 1988, 1996; Oldham & Cummings, 1996). Accordingly, ideas about organizational products, practices, and procedures can be regarded as creative when they are new and original and have potential to be of value in the short or long term (Cummings & Oldham, 1997; George, 2007; Shalley, Zhou, & Oldham, 2004).

Although numerous studies have examined creativity empirically and theoretically, the majority have considered creativity as a universal and single construct (Shalley, Zhou, & Oldham, 2004; Unsworth, 2001). As “assuming a unitary form of creativity in employees with varied individual characteristics and performing dissimilar tasks under a diverse work context is considered unrealistic” (Sung, Antefelt, & Choi, 2017, p. 389), the essence of creativity cannot be captured in a single variable (Sternberg, 1999). In an attempt to distinguish one form of

creativity from another, researchers proposed several conceptualizations regarding creativity as a multifaceted construct, such as radical and incremental and responsive and proactive creativity (Gilson & Madjar, 2011; Madjar et al., 2011; Unsworth, 2001). However, creativity remains insufficiently explored as a multidimensional construct comprising different types. The present study examines potential antecedents, intervening process, and boundary conditions that trigger fundamentally different forms of individual creativity. Specifically, the study extends the literature by examining radical and incremental creativity, which can be explained by different motivational mechanisms.

Previous studies on antecedents of creativity exhibited by employees have identified individual characteristics (e.g., personality, trait, cognitive style, knowledge and abilities, self-concepts and identity, and psychological states), task properties (e.g., goals, job complexity, and job requirements), and social contexts (e.g., social networks, leadership and supervision) to explain creativity at the individual level (Anderson, Potočnik, & Zhou, 2014; Shalley, Zhou, & Oldham, 2004). Among these various predictors of individual creativity, the current study attends to individual factors, specifically, individual psychological needs. In her broad examination of factors influencing individual creativity, Amabile (1988) highlighted the importance of motivational component in the promoting and stimulating individual creativity such that “no amount of skill in the domain or in methods of creative thinking can compensate for a lack of appropriate motivation

to perform an activity” (p. 133). Considering the importance of individual motivation to creativity, the present study explores three psychological needs, namely, need for achievement (N–Ach), need for affiliation (N–Aff), and need for power (N–Pow), which are identified by McClelland’s (1987) trichotomy of needs theory. With *motive disposition theory* (MDT) as basis, the present study examines the processes wherein different psychological needs exhibited by individuals predict distinct types of creativity.

This study also proposes that the relationship between individual psychological needs and the two types of employee creativity is mediated by knowledge management behaviors (KMBs) exhibited by individuals. Previous studies have emphasized that knowledge held by employees is a critical factor to creativity (Amabile, 1996). Research investigating the psychological processes underlying creative idea generation has argued that the knowledge held by individuals generates creative ideas (Brown, Tumeo, Larey, & Paulus, 1998; Nijstad, Stroebe, & Lodewijkx, 2002, 2003; Rietzschel, Nijstad, & Stroebe, 2007). Given that individual knowledge is critical to creativity, scholars began to investigate individual KMBs (e.g., knowledge sharing, knowledge hiding, and knowledge manipulation) that facilitate or inhibit individual creativity (Cerne et al., 2014; Gilson, Lim, Luciano, & Choi, 2013). However, prior studies on KMBs have largely focused on knowledge outflow (e.g., knowledge sharing, knowledge hiding, and knowledge manipulation), leaving less attention to knowledge inflow (e.g.,

knowledge receiving). To address this gap in the literature, the present study puts forward an integrated framework of KMBs including knowledge sharing and knowledge receiving with an aim to explain how employees with different psychological needs produce creative ideas by strategically managing their knowledge.

Drawing on the *norm of reciprocity* (Gouldner, 1960) and *social exchange theory* (SET) (Blau, 1964), the present study proposes that employees with varying psychological needs exhibit distinct types of creativity by engaging in different types of KMBs. Specifically, this study focuses on the two sides of KMBs displayed by individuals as strategic means of knowledge management, namely, knowledge sharing and knowledge receiving (Wang & Noe, 2010). Moreover, with *trait activation theory* (TAT) as basis (Tett & Burnett, 2003), it's predicted that the value importance of knowledge either attenuates or accentuates the relationship between employees' psychological needs and KMBs. Understanding the intervening process and boundary conditions that underlie the relationship between employees' psychological needs and creativity enhances the explanation for the expected phenomenon.

Simply put, this study proposes that distinct types of individual creativity (radical and incremental) are predicted by different forms of psychological needs (N-Ach, N-Aff, and N-Pow). This psychological needs-creativity relationship is expected to be mediated by employees' KMBs (knowledge sharing and knowledge

receiving). The moderating role of the value importance of knowledge in the psychological needs–KMBs relationship is also examined as well.

## II. THEORETICAL BACKGROUND AND HYPOTHESES

This study first discusses the distinction between radical and incremental creativity following the relationships between individual psychological needs and these two types of creativity. How N–Ach, N–Aff, and N–Pow guide employees to engage in KMBs is then analyzed. In addition, the mediating effect of KMBs in the relationship between the three psychological needs and two types of creativity is investigated. Finally, the study examines the moderation effect of the value importance of knowledge in the psychological needs–KMBs relationship. The theoretical framework is depicted in Figure 1.

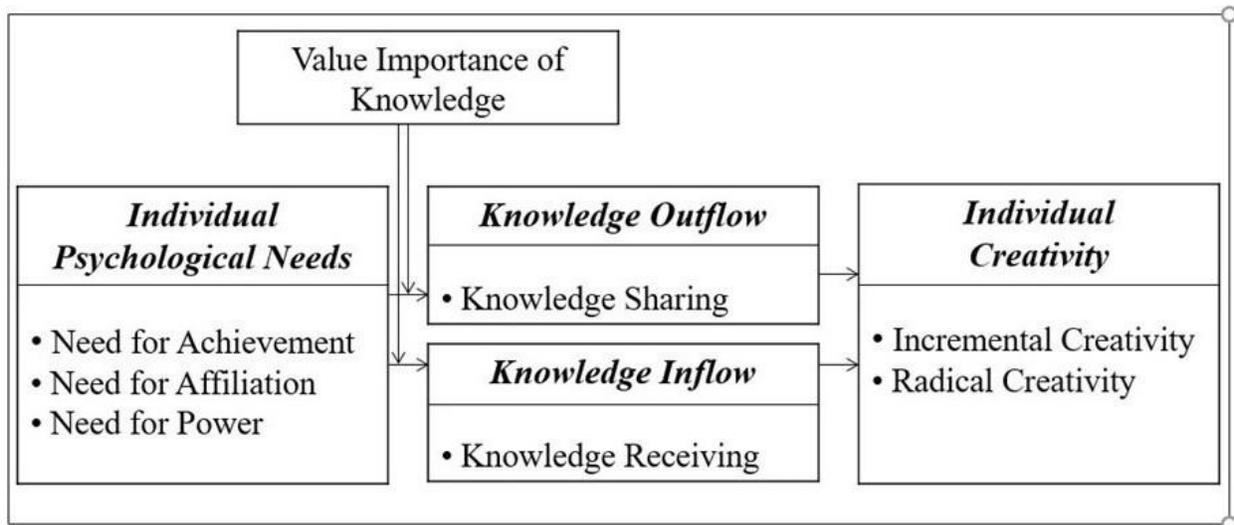


Figure 1. Theoretical Framework

## 1. Incremental and Radical Creativity

Creativity is defined as the production of ideas, products, or procedures that are novel or original, and potentially useful or practical (Amabile, 1996; Shalley, 1991). Challenging the traditional unitary view of creativity, scholars began to argue that studying creativity as a multidimensional construct is important because creativity is a complex construct (Kaufman & Beghetto, 2009) and cannot be captured in a single variable (Sternberg, 1999).

Several conceptualizations and classifications of creativity have been proposed in the literature in an attempt to distinguish the different forms of creativity. For instance, Kaufman and Beghetto (2009) distinguished creativity in terms of magnitude and proposed a four C model of creativity. In their conceptual model, the authors identified four types of creativity, which are (a) little-c, (b) big-c, (c) mini-c, and (d) pro-c. The little-c creativity implies the creative ideas that anyone can participate in everyday life, whereas the big-c creativity indicates notable and long-lasting creative contributions usually made by genius individuals. The mini-c and pro-c creativity categories, which the authors developed later to make further distinctions on the magnitude of creativity, represent creative insights gained through learning process and creative activities exhibited by professionals, respectively. Regarding the predictors of these four types of creativity, the authors argued that little-c and mini-c creativity categories are

most likely predicted by intrinsic motivation, whereas big-c and pro-c creativity types are probably determined by intrinsic and extrinsic motivations.

Arguing that creative contributions vary with regard to the amounts and type of creativity, Sternberg (1999) proposed a propulsion model of creativity that classifies seven types of creativity according to the magnitude and direction of a move. Replication denotes a slight change in what others have done before. Redefinition means re-conceptualizing and applying a creative idea for another purpose apart from the initial one. Forward incrementation is the most common type of creativity that intends to move a field forward from its existing point. Advance forward incrementation refers to creative contributions that are beyond the time that others are prepared for. Redirection and reconstruction relate to moving the field in a different direction than its existing direction. Reinitiation involves starting over in a new direction. The first four types of creativity are attempts to extend the existing paradigm and move the field in its existing direction, whereas the remaining types are attempts to replace the current paradigm and move the field in a new direction.

Unsworth (2001) distinguished creativity according to the reasons and triggers of individuals' engagement in creativity. The author developed a matrix of four distinct types of creativity, namely, responsive, expected, contributory, and proactive creativity. Responsive creativity refers to the ideas and solutions to a specified problem that individuals submit as requirements and demands. Expected

creativity occurs when individuals generate ideas and solutions required for a self-discovered problem. Contributory creativity indicates the individuals' voluntary participation and self-initiated assistance in finding solutions to a problem beyond their duty. Proactive creativity is the active and voluntary participation of individuals in searching for and finding solutions to a problem discovered by themselves. Making such distinctions between various types of creativity is theoretically and practically meaningful in that it provides accurate and comprehensive delineation of creativity as a multidimensional construct. Other authors suggested examining creativity by separating it into incremental and radical creativity (e.g., Gilson, Lim, D' Innocenzo, & Moye, 2012; Gilson & Madjar, 2011; Madjar, Greenberg, & Chen, 2011).

Drawing on the preceding typologies presented in the literature, this study focuses on incremental and radical creativity. The former is defined as "ideas that differ substantially from an organization's existing practices," whereas the latter implies "ideas that imply few changes in frameworks and offer only minor modifications to existing practices and products" (Madjar et al., 2011, p. 731). Radical creativity occurs when individuals generate and introduce new ideas that make revolutionary and significant transformations to existing processes, practices, and frameworks. By contrast, incremental creativity occurs when individuals generate new ideas that make small changes and minor adaptations to the current work products, services, and processes (Gilson & Madjar, 2011; Gilson, Lim,

D' Innocenzo & Moye, 2012; Madjar, Greenberg, & Chen, 2011). Previous studies have indicated that creative ideas can range from minor adaptations to radical breakthroughs (Madjar, Greenberg, & Chen, 2011; Mumford & Gustafson, 1988).

Assuming that radical versus incremental creativity can be predicted by different factors, researchers investigated the potential antecedents, motives, and processes that may trigger the two discrete types of creativity differently. In their empirical study on undergraduate students, Gilson and Madjar (2011) confirmed that incremental and radical creativity are distinct constructs with different predictors and processes. Specifically, their study has confirmed that radical creativity is positively predicted by intrinsic motivation, whereas incremental creativity is positively predicted by extrinsic motivation. Moreover, creativity is radical when individuals focus on identifying and constructing problems (problem-driven). By contrast, creativity is incremental when individuals focus on finding a solution to an existing problem (solution-driven). From a sense making perspective, Madjar, Greenberg, and Chen (2011) extended the literature by demonstrating that career commitment, resources for creativity, and willingness to take risks are important predictors of radical creativity, whereas organizational identification, presence of creative coworkers, and conformity are the strongest predictors of incremental creativity. Gilson, Lim, D' Innocenzo, and Moye (2012) also contributed to the creativity literature with regard to the multidimensionality of the construct. Confirming that radical and incremental creativity are guided by

different motivational factors, their study has demonstrated that radical creativity is promoted when the individual is intrinsically motivated, whereas incremental creativity is stimulated when the employee is extrinsically motivated and has supportive supervision. Jaussi and Randel (2014) further indicated that creative self-efficacy (belief in one's capacity to generate novel and useful ideas) is more positively associated with radical creativity than with incremental creativity. These studies have demonstrated that radical and incremental creativity are driven by different processes and antecedents that are more related to one creativity dimension than the other. Nonetheless, further research is necessary to fully understand and discover the potential factors that influence different types of creativity, specifically radical versus incremental creativity.

## **2. Individual Psychological Needs and Incremental versus Radical Creativity**

With MDT as basis, this study proposes that individuals' engagement in radical and incremental creativity is triggered by their psychological needs in accordance with their motive dispositions. MDT asserts that individuals' motives greatly differ, thus affecting and predicting their behaviors, perceptual orientations, and outcomes (McClelland, 1985; Sheldon & Schöler, 2011). In MDT, motive disposition refers to learned or acquired preferences and orientations that drive

individuals to desire particular types of natural incentives (and needs) in an environment more than other types (Atkinson, 1982; Sheldon & Schüler, 2011). The “motive matching” perspective of MDT asserts that “people high in a particular disposition should benefit more when they get experiences that match their disposition” (Sheldon & Schüler, 2011, p. 1108). Similarly, self-concordance model, which attempts to explain the effects of individuals’ different motives on various outcomes and behaviors, postulates that individuals’ motivation and subsequent regulation of behavior is guided by their goals and psychological needs (Sheldon & Elliot, 1999; Sheldon & Schüler, 2011). These goals and needs are considered self-concordant when they are compatible with individuals’ authentic values and interests.

Drawing on the aforementioned assumptions of MDT and self-concordance model, this study expects that radical and incremental creativity are differently predicted by three individual psychological needs (N-Ach, N-Aff, and N-Pow), which are conceptualized as stable motive dispositions varying from one individual to another. McClelland’s three needs theory claims that every individual, irrespective of his/her demography, culture, or wealth, has either one or a combination of three types of motivational needs that motivates him/her toward certain interpersonal behaviors—N-Ach, N-Aff, and N-Pow (Rutter, Smith, & Hall, 2005). Individual needs are regarded as critical indicators that direct an individual toward a certain behavior (Feist, 1985). Furthermore, self-

determination theory (Deci & Ryan, 2000) contends that as individuals' behavior is self-motivated, basic psychological needs provide relevant bases for the direction of action.

### *2.1. Need for Achievement and Incremental versus Radical Creativity*

Individual's N-Ach reflect the desire for achieving excellent accomplishments, aspiring superior performance, and showing competitive behavior (McClelland, 1961). Individuals who exhibit high N-Ach tend to pursue high performance standards through their own skills and efforts and take personal responsibility for finding solutions to problems (Lussier & Achua, 2007; McClelland, 1961). These individuals are generally task-driven, competent, and work-oriented (Hon & Rensvold, 2006). In previous studies, individuals with strong N-Ach set harder goals and performed better than those with weaker N-Ach (Matsui, Okada, & Kakuyama, 1982; Yukl & Latham, 1978). People with strong N-Ach tend to choose and undertake moderately difficult goals and tasks that are achievable through their own skills and efforts (Lussier & Achua, 2007; McClelland, 1961). Performing excessively difficult tasks may not match their motive disposition because that the likelihood of completing such tasks is uncertain and they desire successful achievement through their own skills and efforts. Performing easy tasks

which can be completed by everyone else may also not match their motive disposition as doing so cannot demonstrate their ability and competence substantially.

Creativity is acknowledged as a risky endeavor that raises the levels of uncertainty and reduces predictability and control (George, 2007; Madjar, Greenberg, & Chen, 2011). Accordingly, radical creativity may mismatch the motive disposition of individuals with strong N–Ach. Individuals with high–N–Ach may tend to avoid proposing radical new ideas because doing so entails high risk and uncertainty as well as unexpected disturbances and delays in accomplishing their tasks. However, incremental creativity may be concordant with the motive disposition of these individuals as this type of creativity is less risky compared with radical creativity, thus fulfilling their desire for accomplishment and execution. Individuals with high–N–Ach may likely exert incremental creativity engaging in activities such as seeking and offering minor improvements and modifications to existing practices and products and finding and suggesting new ideas and methods that imply few changes in the current frameworks.

*Hypothesis 1:* Individual N–Ach is (a) positively associated with incremental creativity and (b) negatively associated with radical creativity.

## *2.2. Need for Affiliation and Incremental versus Radical Creativity*

An individual's N-Aff represents his/her desire for social interactions, positive interpersonal relationships, and mutual friendship with others (McClelland, 1961). Accordingly, individuals with high N-Aff tend to seek interactions and cooperation with other employees and create and maintain harmonious and intimate relationships (Heyns, Veroff, & Atkinson, 1958; McClelland, 1961). The creativity literature has acknowledged that creative ideas challenge the status quo and thus disrupt interpersonal relationships and work processes, which can induce tension and conflict with others (Sung & Choi, 2009). Individuals with high N-Aff are believed to be concerned about others' thoughts, feelings, and viewpoints (Brock et al., 2005), so they avoid mutual dispute and disagreement with their coworkers (Heyns, Veroff, & Atkinson, 1958; McClelland, 1961). On the one hand, generating and proposing ideas that differ from those of others may not be concordant with the motive disposition of individuals with high N-Aff because such actions conflict with their desire for harmonious interpersonal relationships. These individuals may be reluctant to engage in radical creativity because it implies a major difference from an organization's existing norms and practices.

On the other hand, individuals with high N-Aff are believed to find pleasure in joining groups and teamwork, enjoying social activities, wanting to be loved, and

being emotionally concerned over separation from others (McClelland, 1987; Jha, 2010; Wiesenfeld, Raghuram, & Garud, 2001; Yasin & Stahl, 1990). Given their strong sense of communion and togetherness, individuals with high-N-Aff may engage in incremental creativity activities such as utilizing existing practices and suggesting minor adaptations to existing work processes to satisfy their desire to belong and connect with other members.

*Hypothesis 2:* Individual N-Aff is (a) positively associated with incremental creativity and (b) negatively associated with radical creativity.

### *2.3. Need for Power and Incremental versus Radical Creativity*

Individual's N-Pow refers to the desire to exert influence and control over others and acquire recognition and social status (McClelland, 1961; Winter, 1991). Individuals high in N-Pow tend to seek positions of authority and status, gain control over their work settings, and achieve high goals (Lussier & Achua, 2007; McClelland, 1961). These individuals are generally perceived to be ambitious, assertive, and competitive. Hon and Rensvold (2006) assumed that individuals high in N-Pow show high productivity and good performance given their motivation to win organizational competitions and attract others' recognition.

An important aspect of individuals with high N-Pow is that they often aspire to be recognized and appreciated by others for their power-oriented activities

(Winter, 1973). They tend to believe that gaining positive recognition and reputation among other employees will enhance their power and influence. To this end, these individuals may actively engage in creative activities with an expectation that they can obtain attention and recognition within the organization, which in turn induces the feeling of impact and power. Moreover, they may be inclined to exert creative ideas with their belief that they can demonstrate competence, potentiality, and superiority by being creative. For these reasons, N-Pow is expected to be positively related to individual creativity, radical and incremental. Specifically, radical creativity is expected to be more concordant with the motive disposition of employees with high N-Pow than incremental creativity because the former indicates substantial deviation and breakthroughs that draw much attention and appreciation of others. An investigation on the relationship between power motive and subsequent creativity using a sample of science and engineering students has demonstrated that high power motive predicts creative solutions to an engineering problem but only in the positive feedback condition (Fodor, 1990).

*Hypothesis 3:* Individual N-Pow is (a) positively associated with incremental and radical creativity, and (b) the positive relationship is stronger for radical than incremental creativity.

### 3. Individual Psychological Needs and Knowledge Management Behavior

Previous research on KMBs have identified three different types of KMBs, namely, knowledge sharing, knowledge hiding, and knowledge manipulation. Knowledge sharing is defined as “the provision of task information and know-how to help others and to collaborate with others to solve problems, develop new ideas, or implement policies or procedures” (Wang & Noe, 2010, p. 117). Knowledge hiding refers to “an intentional attempt by an individual to withhold or conceal knowledge that has been requested by another person” (Connelly et al., 2012, p.65). Knowledge manipulation is described as “the intentional exaggeration of the value and content of one’s knowledge in favor of one’s benefit” (Rhee & Choi, 2017, p. 815). The focus of the present study is on knowledge sharing.

The antecedents and consequences of knowledge sharing behavior have been extensively investigated in the extant literature. Regarding the motivational factors as antecedents of knowledge sharing, interpersonal trust (affect- and cognition-based trust) is the most common predictor of knowledge sharing (Andrews & Delahaye, 2000; Chowdhury, 2005; Bakker et al., 2006; Wu et al., 2007). Research has also shown that justice (distributive and procedural) positively affects individual knowledge sharing (Schepers & van den Berg, 2007; Lin, 2007). Other motivational factors identified in the literature that positively

predict knowledge sharing include perceived benefits and costs, beliefs of knowledge ownership, and attitudes toward knowledge sharing (Bock & Kim, 2002; Bordia et al., 2006; Constant et al., 1994).

With respect to the interpersonal and team characteristics, the more the team is diversified and cohesive, and the stronger the social ties among individuals, the more frequent the knowledge sharing is (Bakker et al., 2006; Sawng et al., 2006; Reagans & McEvily, 2003). Regarding the organizational context, knowledge sharing is high in an organizational climate that encourages learning, new ideas, and innovation (Ruppel & Harrington, 2001; Taylor & Wright, 2004). Management support, organizational structure, and benefits and costs perceived by employees are among the organizational factors that positively affect knowledge sharing behavior (Connelly & Kelloway, 2003; Kankanhalli et al., 2005; Kim & Lee, 2006). Individual characteristics such as openness to experience and confidence in a knowledge sharing ability are critical drivers of engagement in knowledge sharing (Cabrera et al., 2006; Lin, 2007).

Although the KMB literature has broadly examined knowledge sharing, which is the outflow side of knowledge, most previous studies have overlooked knowledge receiving, which is the inflow side. Scholars argued that knowledge outflow and inflow should be studied separately as they represent substantially different sides of knowledge flows (e.g., Gupta & Govindarajan, 2000). Despite the lack of previous studies on the distinction between knowledge outflow and inflow,

empirical studies have been conducted. Foss et al. (2009) made a distinction between receiving and sending of knowledge and examined their antecedents. Receiving and sending of knowledge are positively predicted by intrinsic, introjected, and extrinsic motivation (Foss et al. 2009). Using a sample of 284 undergraduate students to investigate potential predictors of knowledge giving and knowledge receiving, Ergün and Avcı (2018) found that knowledge sharing self-efficacy, motivation, and sense of community positively predicts both.

Schulz (2003) investigated the factors that affect knowledge inflow from peer units into subunits of multinational corporations. Knowledge inflow is intensified in the case of high level of codification (ability to convert tacit knowledge into explicit knowledge), strong informal relations between subunits, and high outflows of knowledge (Schulz, 2003). Similarly, Gupta and Govindarajan (2000) empirically tested the determining factors of knowledge outflow and inflow within subunits of multinational corporations. The data analysis from 374 subsidiaries has revealed that knowledge inflow originating from peer subsidiaries is positively predicted by the existence and richness of transmission channels.

The findings of the aforementioned works suggest that knowledge inflow is as important as the outflow, so the present study investigates knowledge sharing and knowledge receiving simultaneously.

### *3.1. Need for Achievement and Knowledge Sharing and Knowledge Receiving*

Individual knowledge sharing can be understood as a process wherein employees provide their organizationally relevant information, knowledge, ideas, experiences, and know-how for their colleagues (Bartol & Srivastave, 2002; Wang & Noe, 2010). Individual knowledge receiving, to the contrary, can be understood as the extent to which employees gain and acquire organizationally relevant information, knowledge, ideas, experiences, and know-how from their colleagues. Individual knowledge shared and received through communication and interaction among employees is accumulated and expanded gradually, which in turn contributes to the collective knowledge stock (Wenger & Snyder, 2000).

Individuals with high N-Ach tend to seek feedback on their personal performance and methods of performing tasks (McClelland, 1987). When individuals with high N-Ach, through performance evaluation and feedback, believe that knowledge sharing is important to, and valued by, his/her colleagues and organizations, he/she will probably increase his/her willingness to engage in knowledge sharing. Furthermore, these individuals tend to desire for high level of performance (McClelland, 1961; Lussier & Achua, 2007). Accordingly, individuals with high N-Ach are likely to regard knowledge as a competitive advantage to achieve superior performance. From the norm of reciprocity perspective (Gouldner,

1960), employees with high N–Ach may engage in knowledge sharing behavior with an expectation that the knowledge receiving coworker will reciprocate this behavior, sharing valuable and important knowledge that contributes to their knowledge stock. Reciprocity is predicted in that sharing knowledge with others may, in turn, stimulate receiving knowledge from others.

*Hypothesis 4:* Individual N–Ach is positively associated with (a) knowledge sharing and (b) knowledge receiving.

### *3.2. Need for Affiliation and Knowledge Sharing and Knowledge Receiving*

From the norm of reciprocity perspective (Gouldner, 1960), individuals engage in knowledge sharing behavior, establish interpersonal trust, and expect that the coworker will reciprocate this behavior in the future (Davenport & Prusak, 1998).

Individuals with high N–Aff tend to establish, maintain, and restore a positive and important interpersonal relationship with their coworkers compared with individuals with low N–Aff (McClelland, 1961; Heyns, Veroff, & Atkinson, 1958). Researchers explained the positive association between individual affiliation and knowledge sharing behavior. For instance, Bock and Kim (2002) found that

employees with strong N–Aff are likely to assist other employees and show positive knowledge sharing attitudes beyond their responsibility when they believe that their mutual relationships can be improved. Liao, Chang, Cheng, and Kuo (2004) demonstrated that besides the affiliation among team members, affiliation between the employees and the organization can influence knowledge sharing. Specifically, when a good relationship exists between employees and the firm, employees are likely to share working knowledge and experience with colleagues voluntarily and unconditionally (Liao, Chang, Cheng, & Kuo, 2004).

Employees who exhibit high N–Aff tend to be concerned about creating and maintaining harmonious and friendly relationships and interactions with others. From the perspective of SET and the norm of reciprocity (Gouldner, 1960), individuals in an organization who place high emphasis on affiliation can be willing to share their knowledge under the expectation that such sharing will greatly improve their relationship with their coworkers and that the coworkers will reciprocate this behavior positively. The more the employees anticipate reciprocal relationships from others, the more they have positive attitudes toward knowledge sharing (Brock et al., 2005). Regarding the extent to which the individuals with high N–Aff receive and gain knowledge, reciprocity behavior is expected to arise such that the more the individual shares knowledge with his/her colleagues, the greater the knowledge that he/she will receive from the colleagues.

*Hypothesis 5:* Individual N–Aff is positively associated with (a) knowledge sharing and (b) knowledge receiving.

### *3.3. Need for Power and Knowledge Sharing and Knowledge Receiving*

Individuals with high N–Pow tend to be concerned with influencing others, seeking positions of authority and status, gaining control over their work settings, and achieving higher goals (McClelland, 1961; Lussier & Achua, 2007). As they perceive the competition with coworkers for central position and reputation in an organization as their motivation, knowledge they acquired and created is deemed as a competitive advantage and source of power.

On the one hand, individuals with high N–Pow may pursue knowledge sharing in an attempt to gain reputation and positive impression among their coworkers. They may believe that sharing knowledge and know–how with coworkers may increase their influence over and reputation among others.

On the other hand, when individuals with high N–Pow perceive that knowledge is the critical power to achieve excellent personal performance and high position in the organization, they may be willing to hide and withhold their knowledge from coworkers. Similarly, when such individuals perceive that their

knowledge and know-how will somehow benefit and help their competitors, they may hide or conceal it in an attempt to retain and stabilize their individual power and distinctive competence, thereby preventing coworkers from improving their own performance. Orhun and Hopple (2006) found that when individuals value their knowledge and are unwilling to lose power, they are less willing to share knowledge.

Ford and Staples (2010) argued that knowledge sharing and knowledge hiding can occur simultaneously because they are two separate and distinct constructs. Thus, the present study hypothesizes that high N-Pow is either positively or negatively related to knowledge sharing. In accordance with the norm of reciprocity, lesser knowledge shared by individuals with high N-Pow yields lesser knowledge received, and greater knowledge shared by individuals with high N-Pow yields greater knowledge received.

*Hypothesis 6a:* Individual N-Pow is positively associated with (a) knowledge sharing and (b) knowledge receiving.

*Hypothesis 6b:* Individual N-Pow is negatively associated with (a) knowledge sharing and (b) knowledge receiving.

#### 4. Mediating Role of Knowledge Management Behavior

This study expects that individual KMBs will mediate the relationship between individual psychological needs and radical versus incremental creativity. As previously discussed, individuals with high N-Ach and N-Aff will be encouraged to engage in knowledge sharing, whereas those with high N-Pow will be reluctant to share knowledge. In addition, knowledge receiving will be higher for individuals with N-Ach and N-Aff and lower for those with N-Pow. Considering the importance of knowledge in individual creativity, different kinds of knowledge management exercised by employees seem plausible intervening mechanisms in the needs-creativity relationship. Accordingly, depending on their psychological needs, employees choose different types of KMBs that in turn influences their creative performance.

Knowledge sharing and knowledge receiving play a critical role in individual creative performance. First, they expand the existing knowledge stock of employees (Cropanzano & Mitchell, 2005). Knowledge sharing and knowledge receiving indicate not only the transfer and exchange of information, suggestions, and knowledge but also denote the creation of new knowledge and innovative ideas (Cabrera & Cabrera 2005; Shalley, Zhou, & Oldham, 2004). Employees expand their personal knowledge stock and domain by sharing and receiving knowledge and discussing ideas with others because doing so enables employees to acquire new information, gain important knowledge, and obtain useful skills (Kuo, Kuo, &

Ho, 2014; Quinn, Anderson, & Finkelstein, 1996). These heterogeneous knowledge, skills, and capabilities will provide employees with useful perspectives and alternatives for enhancing their problem solving capabilities, organizational performances, and eventually their creativity (Amabile et al., 1996; Pelled, Eisenhardt, & Xin, 1999). Furthermore, knowledge sharing and knowledge receiving can be conducive to individual creativity as it can “maximize the power of knowledge that resides in individuals” because “power of collective knowledge through social exchanges is far greater than the sum of individual knowledge” (Kuo, Kuo, & Ho, 2014, p.699). Finally, knowledge sharing can promote individual creativity because collaboration and cooperation among employees will be enhanced when employees exchange their valuable knowledge and know-how to help others solve problems and develop ideas (Chen & Chen, 2010; Wang & Noe, 2010).

Previous studies have confirmed the importance of knowledge sharing in creative and innovative performance (Hulsheger, Anderson, & Salgado, 2009; Lee et al., 2011). For instance, Wah and her colleagues (2018) demonstrated the positive mediating effect of tacit knowledge sharing on the association between affect- and cognition-based trust with innovative behavior. Hussain et al., (2017) found a similar role of knowledge sharing on the relationship between transactional leadership and organizational creativity. Furthermore, knowledge sharing mediates

the relationship between IT-capability and –support and innovation performance (Qammach, 2016).

Although knowledge inflow has not received much attention, its impact on organizational performance and innovation has been examined. One of the few studies that contributed to the distinction between knowledge outflow and inflow is that of Mom, Van Den Bosch, and Volberda (2007) who examined knowledge inflow at the managerial level and further classified it into bottom-up, horizontal, and top-down levels. Using data from 104 managers, the results have indicated that top-down knowledge inflows positively predict manager' s exploitation activities, whereas horizontal and bottom-up knowledge inflows positively predict manager' s exploration activities. Lai, Lui, and Tsang (2015) empirically tested the impact of knowledge flows on organizational innovation and found its positive relationship with innovative behavior. Innovation is lower in units with lower levels of knowledge inflow and outflow (Lai, Lui, & Tsang, 2015).

On the basis of the above discussions, this study predicts that depending on their different psychological needs (N-Ach, N-Aff, and N-Pow), employees exert distinct types of KMBs (knowledge sharing and knowledge receiving) that in turn influences their creative performance (radical and incremental creativity).

First, the association between individuals with high N-Ach and incremental creativity can be interpreted by the mediating mechanism of knowledge sharing and knowledge receiving. Individuals with high N-Ach may assume that sharing

their valuable knowledge will be reciprocated by acquiring heterogeneous new knowledge, skills, and capabilities that will broaden and deepen their existing personal knowledge and competence required for subsequent accomplishment and creative performance. Furthermore, the intervening process of knowledge sharing and knowledge receiving behavior can be explained by the relationship between individual N–Aff and incremental creativity. Individuals are more likely to believe that by sharing (and in turn, receiving) their knowledge and know–how to help others solve problems and develop ideas will strengthen their interpersonal collaboration and cooperation with other employees. Finally, knowledge sharing and knowledge receiving will mediate the positive link between individuals with high N–Pow and radical and incremental creativity. Employees will likely expect that they can increase the value and significance of their knowledge and acquire recognition in the organization, which in turn influence their creative performance.

*Hypothesis 7:* Individual a) knowledge sharing and b) knowledge receiving mediate the association between individual psychological needs (N–Ach, N–Aff, and N–Pow) and radical versus incremental creativity.

## 5. Value Importance of Knowledge as a Moderating Contingency

Drawing on the TAT developed by Tett and Burnett (2003), the present study identifies value importance of knowledge as a social condition that stimulates individuals with different needs to exert distinct types of KMBs. As stated by Tett and Burnett (2003), trait activation is “the process by which individuals express their traits when presented with trait–relevant situational cues” (p. 502). The basic premise is that individual traits can be activated and subsequently prompt trait–related behaviors through situational circumstances that facilitate their expression (Tett & Burnett, 2003; Tett & Guterman, 2000). These situational cues can stem from three broad categorizations: task, social, and organizational (Tett & Burnett, 2003; Tett & Guterman, 2000). Previous research has empirically validated the central tenets of TAT. For instance, Zagenczyk et al. (2017) demonstrated that narcissistic employees are more likely to exit under the situation when they have high as opposed to low levels of psychological contract violation. Noe, Tews, and Michel (2016) found that managers with a strong learning goal orientation are more inclined to engage in informal learning under a more supportive training climate. Greenbaum, Mawritz, and Quade (2014) revealed that as a situational factor, abusive supervision activates employees’ Machiavellianism toward unethical behavior.

By adopting the theoretical view of TAT, the present study proposes that the individual needs–KMBs relationship will be strengthened under the situational condition of high value of knowledge. Value importance of knowledge can be regarded as a social, rather than individual, value shared among team members, such that the members consider knowledge as a key resource for team performance and thus highly appreciate its importance. Value is defined as “an enduring belief that a specific mode of conductor end–state of existence is personally or socially preferable to an opposite or converse mode of conduct or end–state of existence” (Rokeach, 1973, p. 5). Values “affect one’ s selection of behavioral goals” (Gillespie & Mann, 2004, p. 593). Furthermore, Wiener (1988) argued that “a major source of these values may be social expectations, particularly when they are shared” (p.535). Accordingly, the socially shared acknowledgment of knowledge as a highly valued resource within the team can lead to all the needs manifested in the form of KMBs. By offering knowledge, individuals with N–Ach may pursue higher performance, those with N–Aff can maintain harmonious interpersonal relationships, and those with N–Pow can obtain social recognition.

*Hypothesis 8:* The value importance of knowledge moderates the relationship between individual psychological needs (N–Ach, N–Aff, and N–Pow) and KMBs (knowledge sharing and knowledge receiving). The relationship is

stronger under high value importance of knowledge than under low value importance.

### III. METHOD

#### 1. Sample and Data Collection

To test the theoretical hypotheses, supervisors and their immediate members employed in Korean organizations representing various industries including finance, manufacturing, telecommunication, service, and public were recruited for data collection. Data collection was carried out in two ways.

First, an online survey was conducted by distributing the survey questionnaires to the supervisors through their email addresses. Apart from rating their members, supervisors were asked to provide either the email address or phone numbers of their subordinates, to whom the member survey questionnaires were distributed separately. Second, a paper survey was conducted. Survey packages containing the supervisor and member survey questionnaires were sent to the supervisors via postal mail with pre-stamped and addressed return envelopes.

The survey was distributed to 120 supervisors and 360 members. After excluding questionnaires with incomplete and unmatched responses, a final sample of online (54.7%) and offline (45.3%) responses yielded 75 supervisors and 209 members.

The average team size of the final sample was 9.7 members ( $SD = 10.07$ ). On average, the member sample comprised 66.5% males and 33.5% females. The average age, team tenure, and organizational tenure were 36.8 ( $SD = 8.8$ ), 2.46

(SD = 3.2), and 6.89 years (SD = 6.3), respectively. Education levels of members were high school graduates (6.2%), two-year college graduates (9.6%), undergraduate degree holder (66.5%), and graduate degree holder (17.7%). Employees were rank-and-file workers (33.5%), assistant managers (21.5%), managers (17.7%), deputy general managers (18.7%), and general managers or higher (8.6%). The participants represented diverse industries, including finance (13.9%), manufacturing (33%), telecommunication (7.7%), service (21.1%), public (1.4%), and others (23%). They belonged to administrative (51.7%), sales (11.0%), R&D (15.3%), production (1%), and other departments (21.1%).

The supervisor sample consists of 84% males and their average age and organizational tenure are 44.9 (SD = 8.2) and 13.09 years (SD = 9.73), respectively. The supervisors mostly completed graduate degrees (46.7%) and undergraduate degrees (44.0%). Their average team tenure was 4.3 years (SD = 5.9). Their hierarchical ranks were assistant managers (6.7%), managers (13.3%), deputy general managers (22.7%), and general managers or higher (57.3%).

## 2. Measures

Data were collected from two different sources (employees and supervisors) to avoid the common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Employees responded to questionnaires regarding three dimensions of

psychological needs, two types of KMBs, and value importance of knowledge, whereas the supervisors evaluated the radical and incremental creativity of their members. All items were rated on a 5–point Likert scale ranging from “strongly disagree” to “strongly agree.”

*Three Dimensions of Psychological Needs.* This study used items from the Manifest Needs Questionnaire (Steers & Braunstein, 1976) developed on the basis of McClelland’s (1987) needs theory. Each need dimension was assessed using four items. Items for *N-Ach* ( $\alpha = .74$ ) were “I try very hard to improve on my past performance at work,” “I try to perform better than my coworkers,” “I do my best work when my job assignments are fairly difficult,” and “I take moderate risks and stick my neck out to get ahead at work.” Items for *N-Aff* ( $\alpha = .73$ ) were “When I have a choice, I try to work in a group instead of by myself,” “I try to maintain favorable interpersonal relationships with others,” “I try to have time with my coworkers at work,” and “When my important coworkers are having a personal issue, I feel as if it is my own problem.” Items for *N-Pow* ( $\alpha = .84$ ) were “I seek an active role in the leadership of a group,” “I strive to gain more control over the events around me at work,” “I strive to be in command when I am working in a group,” and “I find myself organizing and directing the activities of others.”

*KMBs.* Knowledge sharing was assessed using four items from Connelly et al. (2012). *Knowledge sharing* ( $\alpha = .76$ ) began with “When my coworker asks

information or knowledge:” and the items were “I looked into the request to make sure my answers were accurate,” “I told my coworker exactly what s/he needed to know,” “I explained everything very thoroughly,” and “I answered all his/her questions immediately.” Knowledge receiving was assessed using three items. *Knowledge receiving* ( $\alpha = .87$ ) began with “When I ask for information or knowledge from my coworkers:” and the items were “My coworkers tell me exactly what I needed to know,” “My coworkers explain everything very thoroughly,” and “My coworkers answered all of my questions immediately.”

***Value Importance of Knowledge:*** *Value importance of knowledge* ( $\alpha = .87$ ) was assessed using four-item measure. The context was “In my team:” and the items were “Everyone agrees with the importance of knowledge,” “To achieve our team goals, we need to obtain and utilize knowledge,” “Team members share the belief that knowledge is important for our success,” and “Knowledge is highly appreciated and regarded as critical resources.”

***Radical and Incremental Creativity.*** The three-item measure by Madjar et al. (2011) was used to measure these two types of creativity. Items for *incremental creativity* ( $\alpha = .90$ ) included “This person uses previously existing ideas or work in an appropriate new way,” “This person is very good at adapting already existing ideas or ads,” and “This person easily modifies previously existing work processes to suit current needs.” Items for *radical creativity* ( $\alpha = .92$ ) included “This person is a good source of highly creative ideas,” “This person

demonstrates originality in his/her work,” and “This person suggests radically new ways for doing advertising.”

*Control variables.* The effect of several demographic variables such as gender, age, education level, organizational tenure, and rank were controlled to prevent their possible influence on the relationships tested.

## IV. RESULTS

### 1. Descriptive Statistics

Before testing the hypotheses proposed in the theoretical section, three preliminary tests were conducted. First, the internal consistency of each scale was tested to ensure that they measure one underlying factor or construct. This reliability analysis showed that the Cronbach' s alpha ( $\alpha$ ) coefficient of each scale was higher than the threshold .70, indicating their appropriateness.

Second, exploratory factor analysis (EFA) of the items assessing radical and incremental creativity was conducted to ensure that they are empirically distinctive. Using principal component analysis, the EFA yielded factor loadings between .86 and .92 for the three items of radical creativity, and between .82 and .90 for the three items of incremental creativity. As these results indicated highly comparable factor loadings of all items, the two creativity factors were confirmed to be statistically discriminant. Confirmatory factor analysis (CFA) was then performed. A two-factor model for the creativity items yielded a good fit with data [ $\chi^2$  ( $df = 8$ ) = 6.475; comparative fit index (CFI) = .99; root-mean-square error of approximation (RMSEA) = .000].

Finally, a series of CFAs was conducted to validate the empirical distinctiveness of all measures. The CFA employed the eight-factor model for 23 items that comprise the six scales rated by employees and for 6 items that

comprise the two scales rated by supervisors. The results indicated a better fit with the data [ $\chi^2$  ( $df = 344$ ) = 452.37; CFI = .96; RMSEA = .04] than any other alternative model [all CFIs < .90, RMSEAs > .100]. With the results demonstrating the empirical distinctiveness of the current scales, the proposed hypotheses were tested using these eight factors. Table 1 presents the means, standard deviations, and correlations among all of the variables. As seen from the table, potential significant relationships can be predicted between the variables that indicate higher correlations. For instance, all three dimensions of psychological needs are significantly correlated with knowledge sharing. The correlation is stronger for N-Ach ( $b = .39, p < .01$ ) and N-Pow ( $b = .38, p < .01$ ) compared with that for N-Aff ( $b = .25, p < .01$ ). Subsequently, knowledge sharing and the three needs indicated significant correlation with both types of creativity. Furthermore, among the three psychological needs, the correlation of N-Aff with knowledge receiving ( $b = .37, p < .01$ ) is much stronger compared with that of the other two needs. These paths that indicate possible relationships among the study variables were further investigated and empirically validated through the hypotheses tests.

**Table 1.** Means, Standard Deviations, and Correlations among Study Variables

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Gender	.67	.47	-												
2. Age	36.8	8.84	.12	-											
3. Education	3.96	.73	.02	.08	-										
4. Position	2.47	1.35	.22**	.52**	.43**	-									
5. Organizational tenure	6.90	6.33	.16*	.60**	.07	.57**	-								
6. Need for achievement	3.78	.57	.01	.04	.21**	.26**	.13	-							
7. Need for affiliation	3.83	.54	-.09	.08	.13	.11	.04	.29**	-						
8. Need for power	3.40	.69	.16*	.13	.22**	.36**	.18**	.49**	.21**	-					
9. Knowledge sharing	4.01	.46	.12	.14*	.12	.24**	.11	.39**	.25**	.38**	-				
10. Knowledge receiving	3.77	.61	.00	.09	.08	.12	.05	.21**	.37**	.11	.22**	-			
11. Value importance of knowledge	4.07	.61	.11	.01	.26**	.17*	.03	.22**	.33**	.19**	.24**	.33**	-		
12. Radical creativity	3.40	.79	-.11	-.03	.14*	.20**	-.01	.28**	.15*	.23**	.20**	.21**	.23**	-	
13. Incremental creativity	3.64	.78	-.02	-.08	.27**	.21**	-.03	.31**	.21**	.21**	.16*	.22**	.33**	.70**	-

Note: N = 209. \* p < .05, \*\* p < .01 (two-tailed test).

## 2. Hypothesis Testing

To empirically investigate the hypotheses proposed in the theoretical model, a multilevel hierarchical linear modeling analysis was used for the main and moderating effects because the data were nested and consisted of individual and group level variables. In testing all the hypothesized relationships among individual psychological needs, KMBs, and two types of creativity, the effects of the participating employees' gender, age, education level, position, and organizational tenure were controlled.

*Main effect.* For the relationship between individual psychological needs and radical and incremental creativity, Hypothesis 1a proposed that individual N–Ach is positively related to incremental creativity. As shown in Table 2, employee N–Ach is positively associated with incremental creativity, and this relationship is significant ( $b = .28, p < .01$ ). Thus, Hypothesis 1a was supported. Hypothesis 1b expected the negative relationship between N–Ach and radical creativity. However, contrary to expectation, N–Ach had a positive effect on radical creativity ( $b = .24, p < .05$ ), thus rejecting Hypothesis 1b. In Hypotheses 2, individual N–Aff was expected to be positively associated with incremental creativity (H2a) and negatively associated with radical creativity (H2b). The results indicated a marginally positive effect of N–Aff on incremental creativity ( $b = .17, p < .10$ ), thereby confirming Hypothesis 2a. N–Aff was positively, but insignificantly, related to radical creativity ( $b = .08, ns.$ ), thus rejecting Hypothesis 2b. Hypothesis

3 proposed the positive association between N-Pow and two types of creativity, expecting the effect to be stronger for radical creativity. Although N-Pow was positively related to two types of creativity, and the relationship was stronger for radical creativity ( $b = .10$ , ns.) compared with that of incremental creativity ( $b = .02$ , ns.), the relationships were insignificant, thus rejecting the proposed hypotheses.

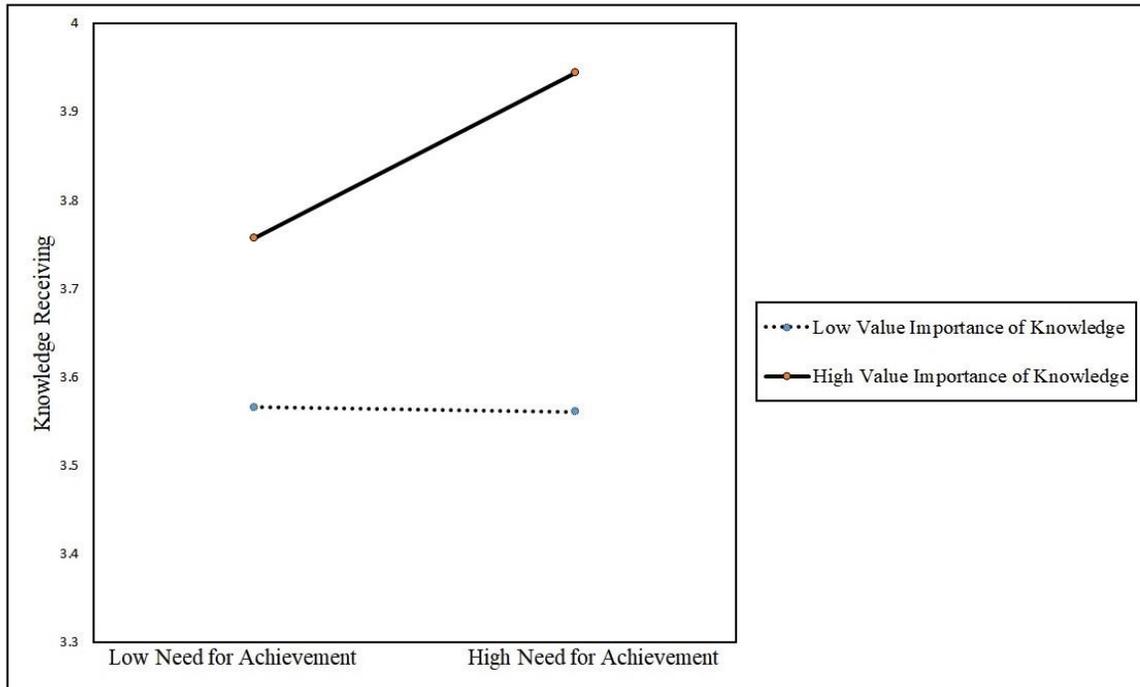
**Table 2.** Results of Hierarchical Linear Modeling: Relationships between Psychological Needs and Creativity

Variables	Outcome: Incremental creativity		Outcome: Radical creativity	
	Model 1	Model 2	Model 1	Model 2
<b>Step 1: Controls</b>				
Gender	-.09 (.11)	-.05 (.11)	-.25 (.11)*	-.25 (.11)*
Age	-.02 (.01)*	-.01 (.01)*	-.01 (.01)†	-.01 (.01)
Education	.17 (.08)*	.13 (.08)†	.01 (.08)	.03 (.08)
Position	.18 (.06)**	.14 (.06)*	.22 (.06)***	.17 (.06)**
Organizational tenure	-.01 (.01)	-.01 (.01)	-.01 (.01)	-.02 (.01)
<b>Step 2: Main effects</b>				
Need for achievement		.28 (.10)**		.24 (.11)*
Need for affiliation		.17 (.10)†		.08 (.10)
Need for power		.02 (.09)		.10 (.09)
R <sup>2</sup>	.13	.19	.10	.15
ΔR <sup>2</sup>		.06		.05

Note: N = 209. Values in parentheses are standard errors.

† p < .10, \* p < .05, \*\* p < .01, \*\*\* p < .001.

Table 3 shows the effects of N–Ach on knowledge sharing and knowledge receiving, as well as the moderating effect of value importance of knowledge in these relationships. The analyses confirmed the expectation that N–Ach is a significant and positive predictor of both knowledge sharing ( $b = .29, p < .001$ ) and knowledge receiving ( $b = .21, p < .01$ ). Therefore, Hypothesis 4 was supported. Furthermore, because the interaction effect of N–Ach and value importance of knowledge was significant for predicting knowledge receiving ( $b = .29, p < .01$ ), a simple slope analysis was conducted and shown in Figure 2. The result confirmed the significant interaction supporting Hypothesis 8 regarding the moderating role of value importance of knowledge in the relationship between N–Ach and knowledge receiving.



**Figure 2.** Interaction between Need for Achievement and Value Importance of Knowledge in predicting Knowledge Receiving

**Table 3.** Results of Hierarchical Linear Modeling: Relationships between N-Ach and Knowledge Outflow and Inflow

Variables	Outcome: Knowledge sharing			Outcome: Knowledge receiving		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Step 1: Controls						
Gender	-.02 (.07)	-.01 (.06)	-.02 (.06)	-.03 (.10)	-.02 (.10)	-.08 (.09)
Age	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.01)	.01 (.01)	.01 (.01)
Education	.02 (.05)	-.01 (.05)	-.03 (.05)	.03 (.07)	-.01 (.07)	-.05 (.06)
Position	.08 (.03)*	.05 (.03)	.05 (.03)	.04 (.05)	.02 (.05)	.02 (.04)
Organizational tenure	-.00 (.01)	-.00 (.01)	-.00 (.01)	-.00 (.01)	-.01 (.01)	-.01 (.01)
Step 2: Main effects						
Need for achievement (N-Ach)		.29 (.05)***	.27 (.05)***		.21 (.08)**	.17 (.07)*
Step 3: Moderating effects						
Value importance of knowledge (Kvalue)			.13 (.05)*			.33 (.07)***
N-Ach*Kvalue			.07 (.08)			.29 (.11)**
R <sup>2</sup>	.06	.18	.21	.02	.05	.17
Δ R <sup>2</sup>		.12	.03		.03	.12

Note: N = 209. Values in parentheses are standard errors.

† p < .10, \* p < .05, \*\* p < .01, \*\*\* p < .001.

Table 4 reports the effects of N-Aff on knowledge sharing and knowledge receiving. As expected, N-Aff was positively and significantly related to knowledge sharing ( $b = .19, p < .01$ ) and knowledge receiving ( $b = .40, p < .001$ ), thus Hypothesis 5 was fully supported. However, the interaction effect of N-Aff and value importance of knowledge was not sufficiently significant to predict knowledge sharing ( $b = -.10, ns.$ ) and knowledge receiving ( $b = .13, ns.$ ). This result rejected Hypothesis 8 that value importance of knowledge moderates the relationship of N-Aff with knowledge sharing and knowledge receiving.

Table 5 shows the results of the relationships between N-Pow and knowledge sharing and knowledge receiving. N-Pow was positively and strongly associated with knowledge sharing ( $b = .23, p < .001$ ), and positively but non-significantly associated with knowledge receiving ( $b = .07, ns.$ ), thus supporting Hypothesis 6a and rejecting Hypothesis 6b. With the significant interaction effect of N-Pow and value importance of knowledge for predicting knowledge sharing ( $b = .13, p < .10$ ) and knowledge receiving ( $b = .23, p < .05$ ), the simple slope analysis was further performed. Figures 3 and 4 show the results of the simple slope analysis that confirmed the interaction effects. These results supported Hypothesis 8 regarding the moderating role of value importance of knowledge in the relationship of N-Pow with knowledge sharing and knowledge receiving.

**Table 4.** Results of Hierarchical Linear Modeling: Relationships between N-Aff and Knowledge Outflow and Inflow

Variables	Outcome: Knowledge sharing			Outcome: Knowledge receiving		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Step 1: Controls						
Gender	-.02 (.07)	-.00 (.07)	-.00 (.07)	-.03 (.09)	.02 (.09)	-.04 (.09)
Age	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.01)	.00 (.01)	.01 (.01)
Education	.01 (.05)	.00 (.05)	-.02 (.05)	.03 (.07)	.00 (.06)	-.04 (.06)
Position	.08 (.03)*	.07 (.03)*	.07 (.03)*	.04 (.05)	.03 (.04)	.02 (.04)
Organizational tenure	-.00 (.01)	-.00 (.01)	-.00 (.01)	-.00 (.01)	-.00 (.01)	-.00 (.01)
Step 2: Main effects						
Need for affiliation (N-Aff)		.19 (.06)**	.15 (.06)*		.40 (.08)***	.32 (.08)***
Step 3: Moderating effects						
Value importance of knowledge (Kvalue)			.11 (.05)*			.25 (.07)***
N-Aff*Kvalue			-.10 (.08)			.13 (.11)
R <sup>2</sup>	.06	.11	.14	.02	.14	.20
Δ R <sup>2</sup>		.05	.03		.12	.06

Note: N = 209. Values in parentheses are standard errors.

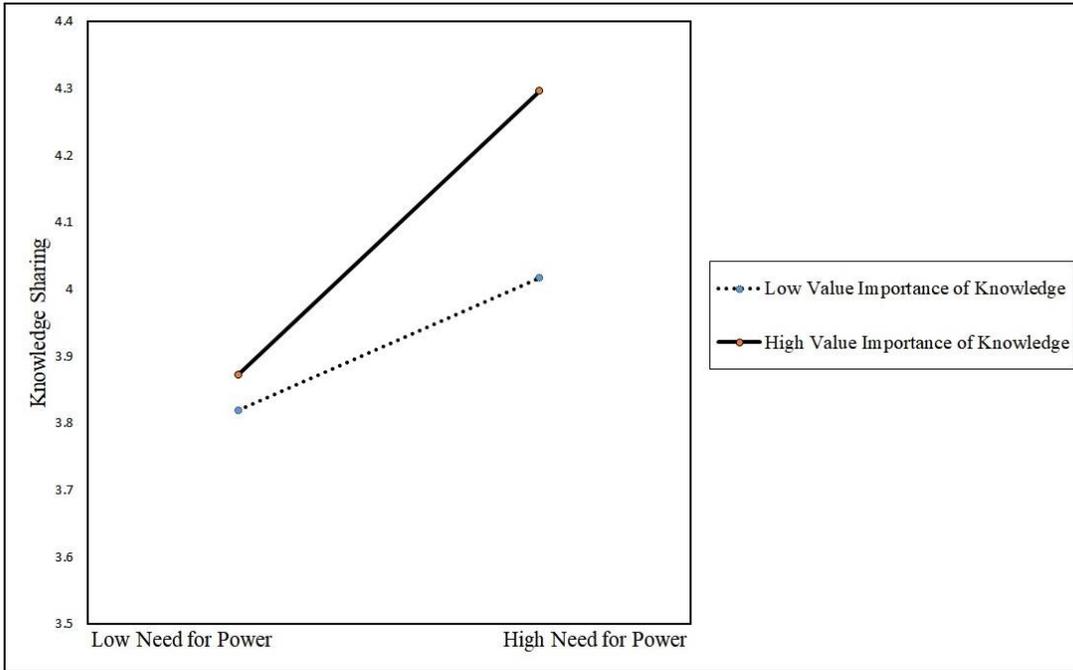
† p < .10, \* p < .05, \*\* p < .01, \*\*\* p < .001.

**Table 5.** Results of Hierarchical Linear Modeling: Relationships between N-Pow and Knowledge Outflow and Inflow

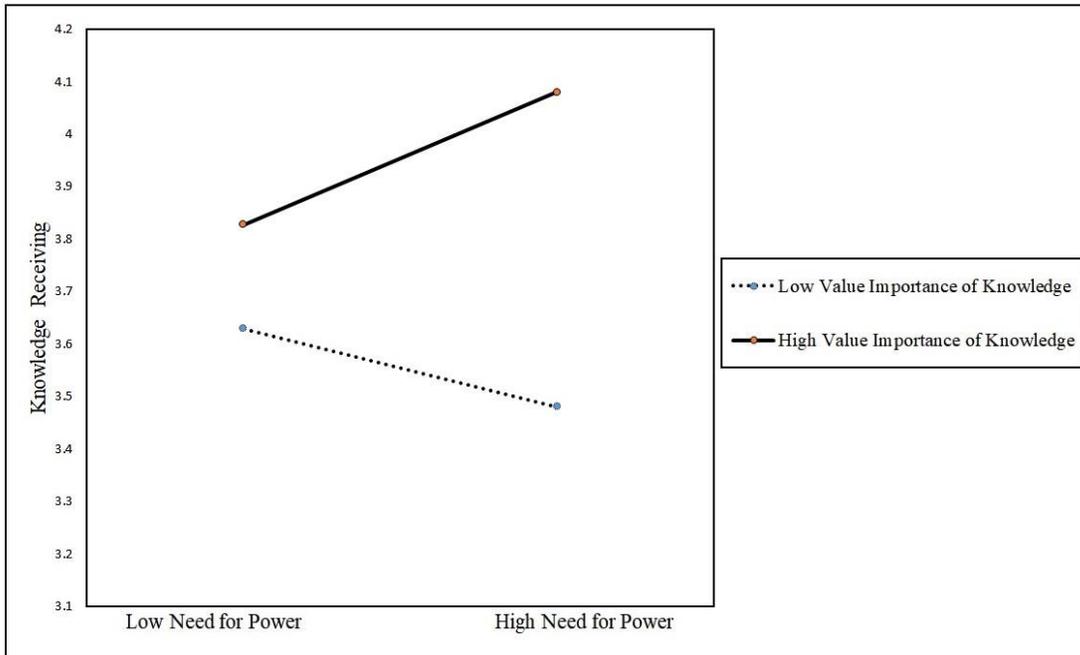
Variables	Outcome: Knowledge sharing			Outcome: Knowledge receiving		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Step 1: Controls						
Gender	-.02 (.07)	-.05 (.06)	-.05 (.06)	-.03 (.09)	-.04 (.09)	-.07 (.09)
Age	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.01)	.01 (.01)	.01 (.01)
Education	.01 (.05)	.00 (.05)	-.03 (.05)	.03 (.07)	.03 (.07)	-.04 (.06)
Position	.08 (.03)*	.04 (.03)	.04 (.03)	.04 (.05)	.03 (.05)	.02 (.04)
Organizational tenure	-.00 (.01)	-.00 (.01)	-.00 (.01)	-.00 (.01)	-.00 (.01)	-.01 (.01)
Step 2: Main effects						
Need for power (N-Pow)		.23 (.05)***	.21 (.05)***		.07 (.07)	.03 (.06)
Step 3: Moderating effects						
Value importance of knowledge (Kvalue)			.14 (.05)**			.34 (.07)***
N-Pow*Kvalue			.13 (.07)†			.23 (.10)*
R <sup>2</sup>	.06	.16	.20	.02	.03	.15
Δ R <sup>2</sup>		.10	.04		.01	.12

Note: N = 209. Values in parentheses are standard errors.

† p < .10, \* p < .05, \*\* p < .01, \*\*\* p < .001.



**Figure 3.** Interaction between Need for Power and Value Importance of Knowledge in predicting Knowledge Sharing



**Figure 4.** Interaction between Need for Power and Value Importance of Knowledge in predicting Knowledge Receiving

The effects of knowledge sharing and knowledge receiving on incremental and radical creativity were examined as well. As shown in Table 6, knowledge sharing was a positive predictor of both incremental ( $b = .19$ , ns.) and radical creativity ( $b = .27$ ,  $p < .05$ ), but was significant only for radical creativity. As shown in Table 7, knowledge receiving positively and strongly predicted incremental ( $b = .25$ ,  $p < .01$ ) and radical creativity ( $b = .25$ ,  $p < .01$ ).

*Mediating effect of KMBs.* In examining the mediation effect of knowledge sharing and receiving in the psychological needs–creativity relationship, the bootstrapping analysis proposed by Preacher and Hayes (2004) was conducted. For the bootstrapping analysis, significance or non–significance of the mediation effect is determined based on the confidence intervals and point estimates, such that a significant mediation effect is present if the range of lower and upper confidence intervals include zero. The results of the bootstrapping analysis are provided in Tables 8 and 9. Knowledge sharing mediates the relationship between N–Aff and radical creativity (indirect effect = .063,  $p < .05$ , 95% confidence interval (CI) [.001, .125]). Knowledge receiving mediates the relationship between N–Aff and incremental (indirect effect = .071,  $p < .05$ , 95% CI [.003, .139]) and radical creativity (indirect effect = .080,  $p < .05$ , 95% CI [.016, .145]). These results partially supported Hypothesis 7.

**Table 6.** Results of Hierarchical Linear Modeling: Relationships between Knowledge Outflow and Creativity

Variables	Outcome: Incremental creativity		Outcome: Radical creativity	
	Model 1	Model 2	Model 1	Model 2
Step 1: Controls				
Gender	-.09 (.11)	-.08 (.11)	-.25 (.11)*	-.25 (.11)*
Age	-.02 (.01)*	-.02 (.01)*	-.01 (.01)	-.01 (.01)†
Education	.17 (.08)*	.17 (.08)*	.01 (.08)	.00 (.08)
Position	.18 (.06)**	.16 (.06)**	.22 (.06)***	.20 (.06)**
Organizational tenure	-.01 (.01)	-.01 (.01)	-.01 (.01)	-.01 (.01)
Step 2: Main effects				
Knowledge sharing		.19 (.11)		.27 (.12)*
R <sup>2</sup>	.13	.14	.10	.12
Δ R <sup>2</sup>		.01		.02

Note: N = 209. Values in parentheses are standard errors.

† p < .10, \* p < .05, \*\* p < .01, \*\*\* p < .001.

**Table 7.** Results of Hierarchical Linear Modeling: Relationships between Knowledge Inflow and Creativity

Variables	Outcome: Incremental creativity		Outcome: Radical creativity	
	Model 1	Model 2	Model 1	Model 2
Step 1: Controls				
Gender	-.09 (.11)	-.08 (.11)	-.25 (.11)*	-.25 (.11)*
Age	-.02 (.01)*	-.02 (.01)*	-.01 (.01)	-.01 (.01)†
Education	.17 (.08)*	.16 (.08)*	.01 (.09)	.00 (.08)
Position	.18 (.06)**	.17 (.05)**	.22 (.06)***	.21 (.06)***
Organizational tenure	-.01 (.01)	-.01 (.01)	-.01 (.01)	-.01 (.01)
Step 2: Main effects				
Knowledge receiving		.25 (.08)**		.25 (.09)**
R <sup>2</sup>	.13	.16	.10	.13
Δ R <sup>2</sup>		.03		.03

Note: N = 209. Values in parentheses are standard errors.

† p < .10, \* p < .05, \*\* p < .01, \*\*\* p < .001.

**Table 8.** Results of Bootstrapped Mediation of Knowledge Sharing

Independent variable	Mediator	Dependent variable	Indirect effect	Products of coefficients			Bootstrapping bias-corrected 95% confidence interval	
				SE	z	p	Lower	Upper
Need for achievement	Knowledge sharing	Radical creativity	.051	.032	1.57	ns.	-.012	.114
		Incremental creativity	-.004	.030	-.12	ns.	-.066	.058
Need for affiliation	Knowledge sharing	Radical creativity	.063	.031	1.98	< .05	.001	.125
		Incremental creativity	.019	.021	.90	ns.	-.023	.061
Need for power	Knowledge sharing	Radical creativity	.046	.028	1.64	< .10	-.009	.100
		Incremental creativity	.014	.032	.43	ns.	-.049	.076

**Table 9.** Results of Bootstrapped Mediation of Knowledge Receiving

Independent variable	Mediator	Dependent variable	Indirect effect	Products of coefficients			Bootstrapping bias-corrected 95% confidence interval	
				SE	z	p	Lower	Upper
Need for achievement	Knowledge receiving	Radical creativity	.038	.021	1.81	< .10	-.003	.078
		Incremental creativity	.035	.024	1.45	ns.	-.012	.082
Need for affiliation	Knowledge receiving	Radical creativity	.080	.033	2.44	< .05	.016	.145
		Incremental creativity	.071	.035	2.03	< .05	.003	.139
Need for power	Knowledge receiving	Radical creativity	.019	.017	1.07	ns.	-.015	.053
		Incremental creativity	.019	.021	.90	ns.	-.022	.060

## V. DISCUSSION

From the perspective of MDT and the accompanying self-concordance model (Sheldon & Elliott, 1999; Sheldon & Schöler, 2011), the present study investigates the relationship between three dimensions of individual psychological needs and individual radical and incremental creativity. First, this study examines how two types of creativity (radical and incremental) are predicted by different forms of psychological needs ((N-Ach, N-Aff, and N-Pow). Second, the mediating effect of employee KMBs (knowledge sharing and knowledge receiving) on this psychological needs-creativity relationship is investigated. Finally, the moderating role of value importance of knowledge in the psychological needs-KMBs relationship is examined.

### 1. Contributions

This study provides meaningful contributions to the creativity literature in several ways. First, the study examines creativity as having two foundationally distinct forms, namely, radical and incremental. Recently, creativity researchers have begun to highlight the different conceptualizations of creativity and identify their potential facilitators (e.g., Gilson & Madjar, 2011; Sung & Choi, 2017). However, they have repeatedly called for an empirical investigation on creativity as a multifaceted construct with distinct predictors as many questions remain

unanswered about the conditions and processes that facilitate one form of creativity versus the other.

Second, this study identifies potential facilitators that are related more to one creativity dimension than the other. Although numerous studies have been conducted to identify individual characteristics (e.g., personality, cognitive style, among others) that are conducive to creative performance, very little is known about how individual psychological needs affect creativity. To fill this gap in the literature, this study conceptually distinguishes three different paths from individual psychological needs to two forms of creativity, showing that different psychological needs of individuals predict discretely the two distinct forms of creativity. The results of this study show that among three types of psychological needs, N–Ach and N–Aff are the significant predictors of incremental creativity rather than the radical creativity. This outcome illustrates our theoretical assumption that different triggers drive the two types of creativity.

Third, this study discovers the intervening process underlying the individual psychological needs–creativity relationship. The intermediate processes through which creativity is predicted by different factors have remained unexplored because most of the existing studies have focused mainly on the direct effects of individual and contextual factors on creativity (Lim & Choi, 2009). Utilizing the conceptualization of KMBs (knowledge sharing and knowledge receiving), the present study systematically shows that depending on their different psychological

needs, employees strategically manage their knowledge, which in turn predicts their engagement in different forms of creativity. In the present study, knowledge sharing was found to mediate the relationship between N–Aff and radical creativity, whereas knowledge receiving mediated the relationship between N–Aff and incremental and radical creativity. These findings suggest that knowledge shared and received are critical determinants for individuals with high N–Aff to engage in creative activities rather than for those with high N–Ach and N–Pow. By theorizing an integrated framework of individual KMBs as a potential mediator between individual psychological needs and creativity, this study contributes to the literature by highlighting the importance of understanding the mediating mechanisms.

One of the major contributions of this study to the existing literature is the distinction between knowledge outflow and inflow. Previous studies in KMB literature has largely focused on the outflow of knowledge, such as knowledge sharing, but the inflow such as knowledge receiving has been neglected. Filling this gap in the literature, this study demonstrates the importance of simultaneously examining knowledge outflow and inflow. The results of the present study show that individuals with high N–Ach and N–Aff scored higher on knowledge sharing and receiving. This finding confirms the reciprocity among the individual interactions. The more individuals share their knowledge and know–how with their colleagues, the more knowledge they receive in turn.

As for individuals with N-Pow, knowledge receiving turns out to be lower despite their high level of knowledge sharing. However, knowledge received by individuals with high N-Pow increases when the value importance of knowledge was high. These findings indicate that when individuals with N-Pow believe that the knowledge and know-how they possess is a critical factor for achieving high position and gaining positive reputations among their colleagues, they are more likely to share, request, and receive knowledge from their colleagues more often. These results confirm this study's contribution to the empirical validation of TAT by investigating how individual differences interact with situational factors in predicting subsequent behavior.

Finally, this study examines the impact of knowledge outflow and inflow on the two types of creativity. The study results indicate positive and significant effects of the two knowledge flows on the two types of creativity. Apart from confirming similar results of previous studies regarding the positive relationship, the present findings suggest that knowledge receiving is as important as knowledge sharing in predicting the creative behavior of individuals.

## **2. Study Limitations and Future Research Directions**

Despite its theoretical implications, this research has several limitations.

First, the generalization of the current findings has potential limits because the study was conducted in Korean organizations that are characterized by high scores on collectivism (Hofstede, 1983). Accordingly, employees within these organizations with high collectivism may more likely report higher, for example, knowledge sharing and receiving behavior than in organizations with low collectivism. Given this generalization issue, future research representing various cultural backgrounds in different countries (e.g., in Western company) should be conducted to validate the findings of the present study.

Second, the causality direction was not investigated because the present data was cross-sectional and collected at one time. Reverse causality may exist. For example, individuals who actively engage in creative activities may more likely share and receive knowledge and know-how. Therefore, future research should consider using longitudinal data to ensure the nonexistence of reverse causality.

In summary, this study contributes to literature by proposing a comprehensive model of different KMBs as a mediating mechanism in individual psychological needs-creativity relationship and offering an integrated theory that combines psychological needs, knowledge management, and creativity at the individual level.

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## 요약 (국문초록)

# 개인의 심리적 욕구가 조직 구성원의 혁신적 및 개량적 창의성에 미치는 영향: 지식관리 행동의 매개 효과

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동기 성향 이론(motive disposition theory, MDT)과 자기 일치 모형(self-concordance model)에 기반하여, 본 연구는 개인의 심리적 욕구 (성취 지향성, 관계 지향성, 영향력 지향성)가 개인의 혁신적, 개량적 창의성을 촉진하는 요인임을 밝혀낸다. 나아가, 사회적 교환 이론(social exchange theory, SET) 및 상호 호혜의 규범(norm of reciprocity)에 따라서, 지식 공유 행위와 지식을 전달받는 행위를 포함하는 종업원 지식 관리 행동(knowledge management behaviors, KMBs)이, 서로 다른 개인의 심리적 욕구의 차원과 두가지 형태의 창의성 간의 관계를 매개하고 있는지 확인하였다. 마지막으로, 특성 활성화 이론(trait activation theory, TAT)의 이론적 관점을 활용하여, 팀 내 지식의 가치 중요성(value importance of knowledge)이 개인의 심리적 욕구-지식 관리 행동

간의 관계를 조절하는지도 연구하였다. 본 연구에서 제시한 이론적 모델과 가설은 한국의 리더 75명과 그들이 관리하는 209명의 구성원들로부터 수집한 데이터를 통해 실증되었다.

분석 결과, 세가지 심리적 욕구 가운데, 성취 지향성이 혁신적 창의성과 개량적 창의성 모두를 높이는 유의한 예측변수임이 확인되었다. 관계 지향성은 개량적 창의성에 양적인 영향을 미치는 것으로 나타났다. 또한, 지식 공유 행위는 세가지 심리적 욕구 모두에 의해 예측되는 반면, 지식을 전달받는 행위는 성취 지향성과 관계 지향성으로 예측되는 것을 알 수 있었다. 또한, 분석 결과는, 팀 내 지식의 가치 중요성과 심리적 욕구의 상호작용이 개인의 지식 공유 행위 및 지식을 전달받는 행위를 촉진시킨다는 것을 보여주었다. 마지막으로, 지식 공유 행위와 지식을 전달받는 행위는 두 종류의 창의성 모두에 양적으로 유의한 영향을 미치는 것으로 나타났다.

**주요어:** 혁신적 창의성, 개량적 창의성, 심리적 욕구, 지식 공유 행위, 지식을 전달받는 행위, 팀 내 지식의 가치 중요성

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