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# How and When does Psychological Empowerment Affect Individual Effectiveness: A Multilevel Investigation

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How and When does Psychological Empowerment Affect Individual Effectiveness:

A Multilevel Investigation

Hyoun Sook Lim, PhD

University of Connecticut, 2015

Over the past decades, psychological empowerment has received much research attention in the management literature; however, a number of important questions still remain unanswered. Accordingly, I propose a multilevel model that examines how and when psychological empowerment influences individual effectiveness such as individual creativity and individual sales performance. First, by integrating the literature on psychological empowerment with the literature on creativity, I examine the mediating role of engagement in creative processes on the relationships between psychological empowerment and individual creativity and individual sales performance. Based on the social learning theory, I further explore several moderating effects on these mediating relationships: (1) the moderating effect of a team leader's supportive behavior on the relationship between psychological empowerment and engagement in creative processes, (2) the moderating effect of team climate for creativity on the relationship between engagement in creative processes and individual creativity, and (3) the moderating effect of team climate for excellence on the relationship between engagement in creative processes and individual sales performance. Multisource data are collected from 598 employees of 113 teams in a large Korean insurance company, and multilevel modeling is used to test hypotheses given the multilevel nature of the data. Findings and implications are discussed, along with limitations of the current study, and directions for future research.

How and When does Psychological Empowerment Affect Individual Effectiveness:

A Multilevel Investigation

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2015

APPROVAL PAGE

Doctor of Philosophy Dissertation

How and When does Psychological Empowerment Affect Individual Effectiveness:

A Multilevel Investigation

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This dissertation is dedicated to

my husband , Sunghwan Cho,

my dad, Munho Lim,

my mom, Taesa Jung

for their constant encouragement, support, and, most of all, endless love,

and my baby, Aiden Soohyun Cho

for the joy he has brought to our life.

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## CHAPTER 1. INTRODUCTION

Due to increasing global competition and change, which requires employee initiative and innovation, psychological empowerment has attracted considerable attention over the last three decades from both researchers and practitioners (Maynard, Gilson, & Mathieu, 2012; Spreitzer, 1995). A number of studies have shown that psychological empowerment is positively associated with individual effectiveness such as individual performance (Ahearne, Mathieu, & Rapp, 2005; Chen, Kirkman, Kanfer, Allen, & Rosen, 2007; Spreitzer, 1995), and several researchers have recently started to broaden the psychological empowerment literature by examining its effects on other important criterion of individual effectiveness such as individual creativity (Sun, Zhang, Qi, & Chen, 2012; Zhang & Bartol, 2010b). However, empirical studies on psychological empowerment have predominantly examined the direct link between psychological empowerment and individual effectiveness leaving several important questions unanswered.

One important research area in the psychological empowerment literature is the exploration of the “black box” of psychological empowerment; the mechanism through which psychological empowerment relates to individual effectiveness is rarely examined (Maynard et al., 2012). That is, psychological empowerment is widely known to influence individual effectiveness, but how it has an effect on individual effectiveness is not yet known. Therefore, by integrating the literature on psychological empowerment and creativity, I theorize and test engagement in creative processes (ECP) as a mediating variable between psychological empowerment and individual effectiveness (i.e., individual creativity and job performance in this study). ECP is defined as “engagement in creative act, regardless of whether the outcomes are novel, useful, or creative” (Drazin, Glynn, & Kazanjian, 1999, p. 287), and is comprised of several components: (1) problem/opportunity identification, (2) information gathering and search

(3) idea generation, and (4) idea evaluation (Amabile, 1983; Reiter-Palmon & Illies, 2004; Rietzschel, De Dreu, & Nijstad, 2009).<sup>1</sup> ECP will be considered as a mediator in this study for several reasons. When looking at Amabile's (1983, 1996) componential model of creativity more carefully, one can see that her model emphasized that ECP is an important antecedent that influence creative outcomes. In fact, her model asserted that both contextual and individual characteristics contributed to creative outcomes through the creative processes. Furthermore, several researchers have also emphasized the importance of the creative processes (Drazin et al., 1999; Gilson & Shalley, 2004), proposing that ECP is a necessary first step or precondition required for individual effectiveness including creative outcomes and job performance (Gilson & Shalley, 2004; Kanter, 1988; Scott, 1995; Woodman, Sawyer, & Griffin, 1993). Therefore, I assert that it is critical to explore the mediating role of ECP in the relationships between psychological empowerment and individual creativity and job performance.

Another important research area is the identification of the boundary conditions under which psychological empowerment leads to individual creativity and job performance. In spite of the positive effects of psychological empowerment that were generally found in the previous studies (Seibert, Wang, & Courtright, 2011), some have shown that the benefit of psychological empowerment is not always achieved (Coleman, 1996; Lawler, Mohrman, & Benson, 2001). This may be because individual creativity and job performance are influenced by not only individual characteristics but also immediate contexts (i.e., teams) to which individuals belong

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<sup>1</sup> Several studies that examined ECP included only the first three components of creative processes when defining it or operationalizing its construct (Gilson & Shalley, 2004; Zhang & Bartol, 2010b). However, most theoretical works in the creativity literature agree that ECP includes the four components stated above: (1) problem/opportunity identification, (2) information gathering and search (3) idea generation, and (4) idea evaluation (Amabile, 1983; Finke, Ward, & Smith, 1992; Lubart, 2000-2001; Reiter-Palmon & Illies, 2004); yet, the last component (i.e., idea evaluation) has not received as much attention as the first three (Reiter-Palmon & Illies, 2004). Thus, in this study, I will include the idea evaluation in order to fully capture the creative processes in defining ECP.

(Shalley, Zhou, & Oldham, 2004; Tett & Burnett, 2003). Nonetheless, there is limited empirical research that examines the moderating effects of immediate contexts on psychological empowerment as an influence on individual creativity and job performance.

As in the psychological empowerment literature, an important yet neglected research area in the creativity literature is the determination of boundary conditions under which ECP are more or less likely to relate to individual effectiveness. While much research attention to date has been focused on the antecedents of creativity because creativity is theoretically assumed to be positively related to individual performance and organizational effectiveness (Amabile, 1996; Gilson & Shalley, 2004; Hackman & Morris, 1975; Kanter, 1988), considerably less is known about when ECP leads to individual creative outcome and job performance (Martinaityte & Sacramento, 2013; Zhang & Bartol, 2010a). Because individuals engage in creative processes regardless of whether the outcomes of their acts are novel, useful, or creative, ECP itself cannot guarantee a high level of individual effectiveness. Therefore, research is needed to investigate when ECP is positively related to individual effectiveness.

Given the theoretical importance of understanding the research areas in the psychological empowerment and creativity literature that are discussed above, the main purpose of this dissertation is to understand the mechanisms and boundary conditions of the effects of psychological empowerment on individual effectiveness. More specifically, by integrating the literature on psychological empowerment (Conger & Kanungo, 1988; Spreitzer, 1995; Thomas & Velthouse, 1990) and creativity (Amabile, 1983, 1996; Drazin et al., 1999; Woodman et al., 1993), this study examines how ECP mediates the effects of psychological empowerment on individual creativity and job performance. Then, based on the social learning theory (Bandura, 1977, 1986), the present study further examines how team contextual factors moderate the

mediating relationships. Specifically, the moderating role of a leader's supportive behavior will be considered in this study because a leader might have a strong impact on creative processes (Mumford, Scott, Gaddis, & Strange, 2002). Also, both team climate for creativity and excellence will be considered as other possible moderators of the relationship between ECP and individual creativity and job performance because both climates are contextual factors that would facilitate individuals moving from engaging in the ideas generation stage to engaging in the next stage, idea implementation stage (Somech & Drach-Zahavy, 2013; West & Anderson, 1996).

Note that this study was conducted in a sales setting because such an environment is appropriate for examining the relationships of this study due to the paradigm shift in sales management as well as the nature of sales jobs. While an early paradigm in sales management is based on the control model, emphasizing hierarchy and bureaucracy as a main focus in managing salespeople, a more recent paradigm in this area is based on the involvement model, which considers psychological empowerment as a central concept (Bowen & Lawler, 1995). Furthermore, salespeople need to be psychologically empowered to perform their jobs because they are the ones who interact with customers most frequently, and they need to quickly respond to customer needs and complaints and provide tailored solutions to customers (Anderson & Dubinsky, 2004; Anderson, Dubinsky, & Mehta, 2007; Bowen & Lawler, 1992). Additionally, while sales performance is a primary source of revenue as well as a key determinant to overall organizational success (Baldauf & Cravens, 2002), creativity in salespeople is another important yet understudied outcome. Because salespeople often encounter challenging and unstructured tasks, frequently facing customers with diverse needs (Wang & Netemeyer, 2004), salespeople need to be creative in various ways in order to be successful. For example, they need to uncover customers' latent needs, develop new ideas for satisfying customer's needs, evaluate multiple

alternatives to solve novel customer problems, devise novel procedures to acquire new clients, and develop good rapport with existing clients (Coelho, Augusto, & Lages, 2011; Martinaityte & Sacramento, 2013). By engaging in creative processes, salespeople can persuade their clients by suggesting a wider and more attractive range of benefits.

To summarize, this study contributes to the psychological empowerment and creativity literatures in several ways. First, very little empirical research has been examined the relationship between psychological empowerment and creativity (e.g., Sun et al., 2012; Zhang & Bartol, 2010b), although a number of studies have been done in the psychological empowerment and creativity literature in isolation from each other (for reviews, see Maynard et al., 2012; Shalley et al., 2004; for meta-analyses, see Ma, 2009; Seibert et al., 2011). As a result, researchers in both literatures have recently called for more studies addressing the issue. For example, creativity researchers seek other predictors that go beyond traditional individual characteristics (e.g., personalities and cognitive styles) to explain unique and nonredundant variances in creativity (Shalley et al., 2004). Among possible individual characteristics, several researchers in the empowerment literature have proposed psychological empowerment as one of the most important (Spreitzer, 1995; Zhang & Bartol, 2010b), yet neglected, variables that would influence creativity (Maynard et al., 2012; Seibert et al., 2011). As a result, empirically testing the link between psychological empowerment and creativity would contribute to the psychological empowerment and creativity literatures by expanding the nomological network of both.

Second, psychological empowerment has been generally considered as a mediator between various antecedents and outcomes (Maynard et al., 2012). That is, numerous studies in the psychological empowerment literature to date have focused on the direct relationship

between psychological empowerment and individual effectiveness; yet, the underlying mechanism remains opaque. To my knowledge, this study is thus among the first to explore the “black box” by identifying the mediating variable in the relationship between psychological empowerment and individual effectiveness. Also, only a few studies have examined potential moderators that influence the relationships within the nomological network of psychological empowerment. Spreitzer (2008) argued that the impact of psychological empowerment on individual effectiveness may not be the same in all contexts, thus suggesting that research is needed to consider contextual factors that may moderate the relationships between them. Therefore, the current study contributes to the psychological empowerment literature by providing a more complete theoretical account of how and when psychological empowerment influences individual effectiveness.

Third, this study contributes to the creativity literature by not only distinguishing creativity as a process from creativity as an outcome, but also by examining ECP (creativity as a process) as a mediator between antecedent variables and individual outcomes. Although creativity can be conceptualized as both a process and an outcome, most of the creativity literature has considered it to be an outcome, that is “novel, and potentially useful ideas” (Shalley et al., 2004, p. 934), though there are several researchers that have suggested the importance of considering creativity as a process (Drazin et al., 1999; Mainemelis, 2001; Mumford, 2000).

This dissertation also contributes to the creativity literature by examining antecedents of creativity at multiple levels. Over the years, several researchers have emphasized the need for multilevel research on creativity (Woodman et al., 1993; Zhou & Shalley, 2008), but the majority of empirical studies in the creativity literature have been conducted at a single level of analysis.

Although recent studies have started to examine antecedents to creativity from a multilevel perspective (e.g., Gilson, Lim, Luciano, & Choi, 2013; Gong, Kim, Lee, & Zhu, 2013; Hirst, Van Knippenberg, & Zhou, 2009; Liu, Chen, & Yao, 2010), there is still a need for more research on the multilevel perspective to provide a more comprehensive and in-depth understanding of creativity. Furthermore, several researchers argued that creativity can be more fully understood when considering the interaction between personal and contextual characteristics (Shalley et al., 2004; Woodman et al., 1993). Therefore, this study adds value to the literature by empirically examining how contextual factors, such as the team leader's supportive behavior and team climate for creativity and excellence, moderate the relationship between psychological empowerment and ECP as well as the relationship between ECP and individual effectiveness.

The remaining chapters of this dissertation are organized as follows: Chapter 2 includes an examination of the relevant literature on psychological empowerment and individual effectiveness, such as creativity and job performance (especially in a sales setting). Then, by integrating these literatures and using the social learning theory (Bandura, 1977, 1986), I will develop an overall theoretical model for this dissertation and propose hypotheses. Chapter 3 presents an overview of the methodology and research design, such as the characteristics of the sample, data collection procedures, measures of this study, and analytic strategy, which are used to empirically test the hypotheses proposed in Chapter 2. Chapter 4 describes the results of the hypothesized models. Chapter 5 includes an overall discussion of the findings, theoretical and practical implications, limitations, and future directions.



## CHAPTER 2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

In this chapter, the literature reviews on psychological empowerment and individual effectiveness such as creativity and sales performance are first presented to develop an overall theoretical framework for this dissertation as a whole. Then, specific hypotheses are developed based on the literature discussed. The overall hypothesized model is depicted in Figure 1.

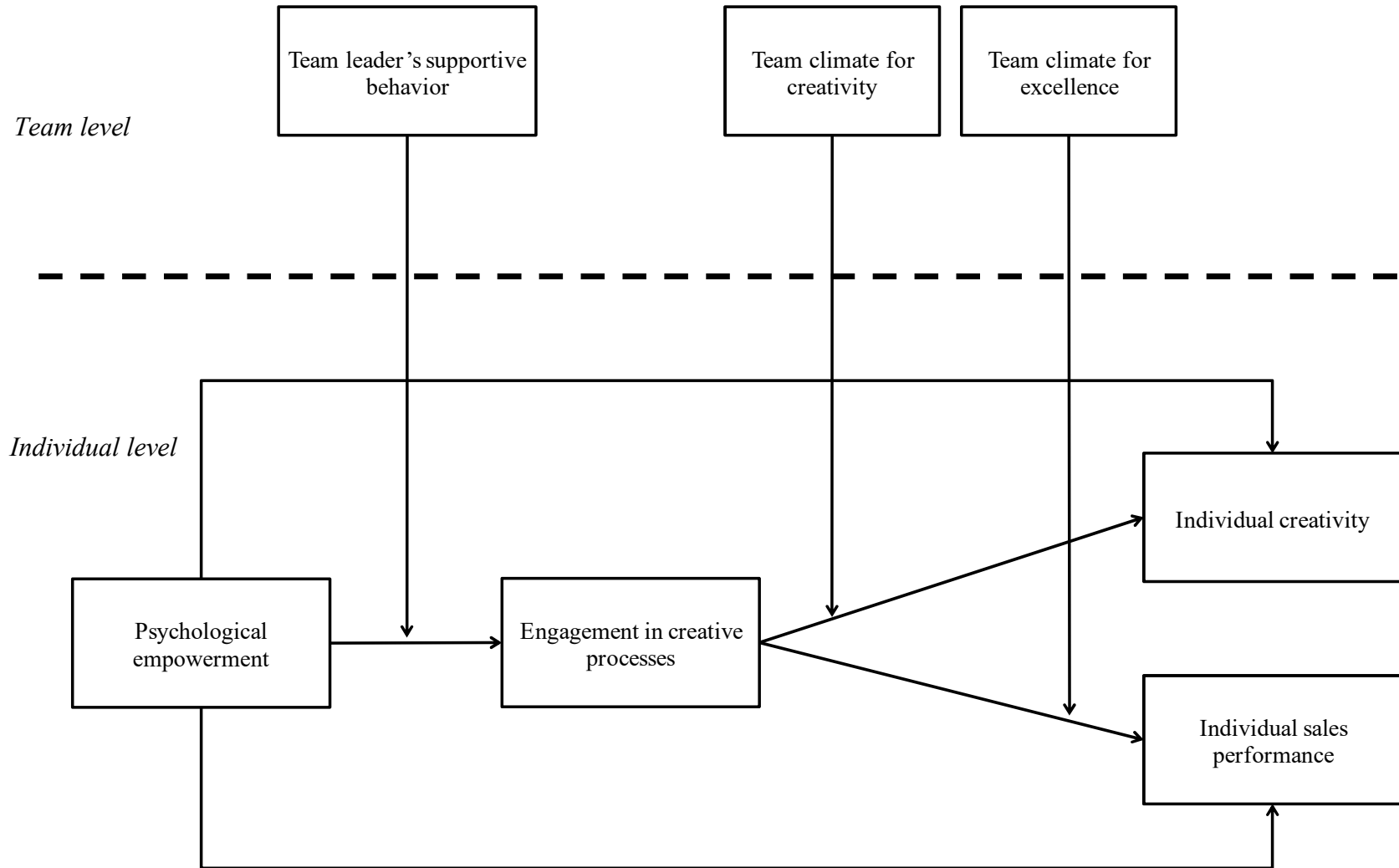
### Literature Review & Theoretical Framework

#### *Psychological Empowerment*

Rooted in the research on employee involvement and participation (Bowers, 1973), as well as the social-structural theory of empowerment (Kanter, 1977), research on empowerment has received considerable attention since the early 1980s (Sagie & Koslowsky, 2000). Because empowerment has been shown to positively influence employees' attitudes, behaviors, and performance (Seibert et al., 2011; Spreitzer, 2008), more than 70% of organizations have implemented some forms of empowerment initiative at their workforce (Lawler et al., 2001).

The construct of empowerment has been defined in several different ways, but it is mainly derived from two different theoretical perspectives: socio-structural (i.e., structural empowerment) and psychological (i.e., psychological empowerment) (Liden & Arad, 1996; Seibert et al., 2011; Spreitzer, 2008). Early works on empowerment were based on the socio-structural perspective, which has been built on Kanter's (1977) seminal ethnographic study of social-structural theory of empowerment in an industrial organization, *Men and Women of the Corporation*. In her study, Kanter argued that work structures and organizational practices have stronger effects on employee attitudes and behaviors than personal characteristics or socialization experiences. Therefore, research on structural empowerment has focused on structures, practices, and policies designed to decentralize power and delegate decision-making

Figure 1. The Overall Hypothesized Model



authority throughout the organization, enabling employees to get more done (Bennis & Nanus, 1985; Kanter, 1977; London, 1993). However, while many researchers have paid attention to structural empowerment, some researchers have argued that the socio-structural perspective of empowerment is limited because it does not address the nature of empowerment as experienced by employees (Spreitzer, 2008). In fact, in some situations, employees do not feel empowered, even when structural empowerment tools are in place. Conversely, employees in other situations perceive themselves as empowered even when they do not have access to empowering structures. This limitation of the socio-structural perspective has stimulated the emergence of the psychological perspective on empowerment (Spreitzer, 2008).

Unlike the socio-structural perspective, the psychological perspective of empowerment (i.e., psychological empowerment) has emphasized the individual's subjective experience of being empowered. Based on Bandura's (1977, 1982) work on self-efficacy, Conger and Kanungo (1988) defined psychological empowerment as "a process of enhancing feelings of self-efficacy among organizational members through the identification of conditions that foster powerlessness and through their removal by both formal organizational practices and informal techniques of providing efficacy information (p. 474)." Expanding upon the work of Conger and Kanungo (1988), Thomas and Velthouse (1990) proposed a cognitive model of empowerment based on the theoretical works by Deci and Ryan (1985), Hackman and Oldham (1980), and Bandura (1977, 1982). Specifically, the authors conceptualized psychological empowerment in terms of "changes in cognitive variables (called task assessments), which determine motivation in workers (p. 667)," and they identified meaningfulness, competence, choice, and impact as a set of task assessments that are related to intrinsic motivation.

Based on the work of Thomas and Velthouse (1990), Spreitzer (1995) later developed a

multidimensional instrument to assess psychological empowerment, which has become the most widely used measure. In her work, psychological empowerment is defined as a psychological state manifested in a set of four cognitions reflecting an individual's orientation to the work role: meaning, competence, self-determination, and impact. *Meaning* refers to a fit between the demands of an individual's work role and an individual's own beliefs, values, and behaviors (Hackman & Oldham, 1980). That is, meaning concerns the degree to which an individual feels that his or her work is personally important. *Competence* refers to a belief in an individual's capability to successfully perform work activities (Carless, 2004) and is equivalent to self-efficacy (Bandura, 1982). *Self-determination* is an individual's sense of choice in initiating and regulating actions (Deci, Connell, & Ryan, 1989) and reflects autonomy in initiating and carrying out tasks (Huang, Iun, Liu, & Gong, 2010). *Impact* refers to an individual's belief that he or she can influence the strategic, administrative, or operational outcomes at work (Ashforth, 1989). These four cognitions — meaning, competence, self-determination, and impact — are combined additively to form an overall construct of psychological empowerment (Spreitzer, 1995). That is, the highest level of psychological empowerment emerges only when all four cognitions are high. If one dimension decreases, the overall levels of psychological empowerment decrease rather than produce a sense of having no psychological empowerment at all (Spreitzer, 1995, 2008).

After Spreitzer (1995) developed the instrument to assess psychological empowerment, numerous empirical studies have examined the relationship between psychological empowerment and individual effectiveness using multiple criteria. Supporting the core proposition that psychological empowerment is related to individual effectiveness due to the more active orientation psychologically empowered individuals take toward work (Spreitzer,

1995), psychological empowerment has been shown to be positively related to work attitudes, such as job satisfaction (e.g., Blau, 1960; Liden, Wayne, & Sparrowe, 2000), organizational commitment (e.g., Avolio, Zhu, Koh, & Bhatia, 2004), and negatively related to intentions to leave or quit (e.g., Avey, Hughes, Norman, & Luthans, 2008; Harris, Wheeler, & Kacmar, 2009). Psychological empowerment has also been shown to be positively related to work performance outcomes, such as managerial effectiveness (e.g., Spreitzer, 1995), individual performance (e.g., Ahearne et al., 2005; Chen et al., 2007; Chen & Klimoski, 2003), and innovation (e.g., Spreitzer, 1995). While much research attention has been focused on the individual effectiveness criteria discussed above, much less has been directed toward other important criteria like individual creativity (Maynard et al., 2012; Seibert et al., 2011). Furthermore, most empirical studies have examined the relationship between psychological empowerment and individual effectiveness, yet little is known about how psychological empowerment leads to such effectiveness, and under what conditions the relationships become the strongest.

### ***Individual Effectiveness: Creativity and Sales Performance***

Effectiveness criteria have evolved over the past decade to include many different forms (Mathieu, Maynard, Rapp, & Gilson, 2008) and must be specified for a particular job because all criteria are not relevant for all jobs (Avila, Fern, & Mann, 1988; Campell, 1990). Recognizing the importance of multidimensionality and specificity, I include two aspects that represent distinct facets of individual effectiveness for present study: creativity and sales performance. Specifically, while creativity captures the extent to which individuals generate novel and useful ideas or products in performing his or her job activities (Amabile, 1996; Wang & Netemeyer, 2004), sales performance captures the extent to which individuals achieve objectives such as

sales volume or market share (Churchill, Ford, Hartley, & Walker, 1985; Sujan, Weitz, & Kumar, 1994). In the following sections, brief reviews of each will be discussed.

***Creativity.*** Creativity is generally defined as the generation of products, ideas, processes, and services that are both novel and useful (Amabile, 1988, 1996; Shalley, 1991). While creativity ranges from incremental changes in how work is conducted to radical breakthroughs (Gilson, Lim, D’Innocenzo, & Moye, 2012; Mumford & Gustafson, 1988), some level of creativity is required in all jobs (Shalley, Gilson, & Blum, 2000).

Creativity can be conceptualized as both an outcome and a process. As an outcome, creativity is defined in terms of various features (Amabile, 1996; Zhou & Shalley, 2011). In the psychology literature, some researchers focus on the novelty, not the usefulness, in defining creativity (Shalley & Zhou, 2008). In the brainstorming literature, for example, creativity generated in a brainstorming session is defined in terms of fluency, flexibility, and originality; fluency refers to the number of ideas generated in response to a problem, task, or situation; flexibility refers to the number of different categories of ideas generated; and originality refers to the uniqueness of the ideas generated. In the context of organizations, however, ideas must have both novelty and usefulness to be regarded as creative (Zhou & Shalley, 2011). That is, ideas should be new and unique compared to other existing ideas and should have the potential to add value to organizations. If either of these characteristics are not present, ideas would not be viewed as creative in organizational contexts (Zhou & Shalley, 2011). For example, the “Ig Nobel” prizes are awarded for odd scientific discoveries every year. In 1996, George Goble won the prize in chemistry by introducing how to ignite a barbecue in three seconds. He lit the barbecue by pouring three gallons of liquid oxygen (a fuel typically utilized by NASA to propel rockets into orbit) over a grill with 60 pounds of coal and a lit cigarette. Although his idea was

judged as novel by the “Ig Nobel” committee, it cannot be considered as creative in an organizational context because it is not useful and does not add value to organizations and scientific fields.

As a process, individual creativity refers to the “engagement in creative acts, regardless of whether the resultant outcomes are novel, useful, or creative” (Drazin et al., 1999, p. 287). That is, creativity as a process is a necessary, but not sufficient, condition for a creative outcome. In order for the creative outcome to emerge, individuals must engage in a variety of cognitive activities that are involved in the creative processes (Shalley, 1991), and several theoretical works have suggested several components of cognitive activities that comprise the creative processes. For example, Wallas (1926) identified four components of the creativity thinking process, including preparation, incubation, illumination, and verification. Stein (1967) identified three components of the creative processes: hypothesis formulation, hypothesis testing, and communication. Parnes, Noller, and Biondi (1977) proposed five components of the creative problem-solving processes: fact finding, problem finding, idea finding, solution finding, and acceptance finding. On a related note, Amabile (1983) proposed a model of the creative processes that included four components: presentation, preparation, response generation, and response validation. Although various models of the creative process exist (for an elaborated review, see Lubart, 2000–2001) as mentioned above, most authors agree that the creative processes include four components: (1) problem/opportunity identification, (2) information gathering and search, (3) idea generation, and (4) idea evaluation (Amabile, 1983; Finke, Ward, & Smith, 1992; Montag, Maertz, & Baer, 2012; Reiter-Palmon & Illies, 2004). Therefore, in order to fully capture the creative processes, engagement in creative processes (ECP) should be defined as an individual’s engagement in creativity-relevant cognitive activities that are

comprised of problem/opportunity identification, information gathering and search, idea generation, and idea evaluation (Amabile, 1983; Reiter-Palmon & Illies, 2004; Rietzschel et al., 2009).

There are two major theoretical frameworks that have evolved in the creativity literature over the decades — the componential model of creativity (Amabile, 1983, 1988) and the interactionist model of organizational creativity (Woodman et al., 1993). Amabile's (1983, 1988) componential model of creativity proposes three factors that enhance individual creativity: domain-relevant skills, creativity-relevant skills, and task motivation. Domain-relevant skills include knowledge about the domain, technical skills, and special talents in the domain in question. Creativity-relevant skills include appropriate cognitive styles, implicit or explicit knowledge of heuristics, and work style for generating creative ideas. Task motivation includes individuals' attitudes toward the tasks and perception of their own motivation for understanding the tasks. One of the most important features of Amabile's (1983, 1988) model is the role of social context in promoting or inhibiting individual creativity through task motivation. Task motivation can be either intrinsic (driven by interest, enjoyment, curiosity, or a personal challenge in the work) or extrinsic (driven by the desire to achieve a goal that is aside from the work itself), and it has been argued that creativity is enhanced by intrinsic motivation, but inhibited by extrinsic motivation (Amabile, 1983; Amabile, Hill, Hennessey, & Tighe, 1994). However, it was later found that under certain conditions, certain forms of extrinsic motivation can be beneficial to creativity when combined synergistically with intrinsic motivation (called as "synergistic extrinsic motivators"; Amabile, 1996). Supporting this argument, a recent meta-analysis provided empirical evidence that extrinsic motivation is positively related to creativity only when the extrinsic rewards are contingent on creativity (Byron & Khazanchi, 2012).



Another main theoretical framework that has been widely used in the creativity literature is the interactionist model of organizational creativity. Woodman and colleagues (1993) proposed this model based on the premise that creativity is affected by the interaction of individual, group, and organizational characteristics, and provided a list of important variables for each. Individual characteristics include cognitive ability/style, personality, intrinsic motivation, and knowledge. Group characteristics consist of norms, cohesiveness, size, diversity, roles, tasks, and problem-solving approaches. Lastly, organizational characteristics include culture, resources, rewards, strategy, structure, and technology. Like Amabile's (1983, 1988) componential model, the interactionist model offered by Woodman et al. (1993) addressed the effects of contextual factors, both at group and organizational levels, that were associated with creativity but further stressed the importance of considering the interaction of various factors across levels (Zhou & Shalley, 2003).

Based on these two theoretical models of creativity, numerous empirical studies have examined the effects of various contextual and personal characteristics on creativity, and most studies have focused on creativity as the outcome. As extensive studies on creativity have been accumulated based on these theoretical models, Shalley and her colleagues (2004) provided a comprehensive review of empirical research on creativity that has been studied over the past two decades. In their review of the creativity literature, several personal and contextual characteristics are shown to influence individual creative performance. For personal characteristics, personality traits using Creative Personality Scale (CPS; Gough, 1979), the Five Factor Model of personality (FFM; Costa & McCrea, 1992), and cognitive styles (Kirton, 1976) are predictive of individual creativity. For contextual characteristics, job complexity, the relationship with supervisors, the relationship with coworkers, rewards, evaluation, time

deadlines and goals, and spatial configurations of the work settings are included as factors that enhance or inhibit individual creativity. Although their review summarized that creativity is influenced by individual characteristics and contextual characteristics, the authors highlighted several areas that need more research. First, besides the individual characteristics found in the previous studies, other possible individual characteristics may influence creativity. For example, a few researchers have proposed psychological empowerment being one of the most important (Spreitzer, 1995; Zhang & Bartol, 2010b) because psychologically empowered individuals are less constrained than others by technical or rule-bound aspects of work (Amabile, 1988). Also, psychological empowerment is important for individuals to stimulate and manage change in organizations (Conger & Kanungo, 1988). Yet, only minimal attention has been paid to understanding the relationship between psychological empowerment and creativity (Maynard et al., 2012; Seibert et al., 2011).

While abundant studies have examined antecedents to the creative outcome, only recently have a few studies started to examine antecedents or consequences of the creative processes. For example, Gilson and Shalley (2004) investigated antecedents that influenced engagement in creative processes at the team level. Results based on analysis of variance (ANOVA) revealed that teams were more frequently engaged in creative processes when their jobs required creativity, their works required task interdependence, goals were shared among team members, team members actively participated in problem solving, team climate was supportive of creativity, team members had a moderate amount of organizational tenure, and team members socialized with each other more frequently. Gilson, Mathieu, Shalley, and Rubby (2005), on the other hand, examined the consequences of the creative processes at the team level using a sample of service technician teams, and they found a positive relationship between team creative

processes and team performance. Furthermore, two empirical studies examined the mediating effects of the creative processes. For example, Taggar (2002) found that individuals with high levels of openness to experience were more likely to engage in creative processes (he used the term “creativity-relevant process”), which led to the individual creative outcome. On a similar note, Zhang and Bartol (2010b) found that ECP mediated the relationship between empowering leadership, psychological empowerment, and the creative outcome. The empirical findings mentioned above support the hypothesis that creativity as a process is a distinct construct from creativity as an outcome and additionally that creative processes may act as a potential mediator of the effects of personal and contextual factors on the creative outcome. Although a good start has been made in this area, additional studies are needed to understand how creative processes (i.e., ECP in this study) affects individual outcomes.

***Sales Performance.*** One of the most-examined effectiveness criteria in the sales setting is sales performance because it is a primary source of revenue as well as a key determinant to overall organizational success (Baldauf & Cravens, 2002). Thus, numerous variables that influence sales performance have received considerable attention over the last several decades, and a couple of meta-analyses have summarized the effects of the variables on sales performance (e.g., Churchill et al., 1985; Verbeke, Dietz, & Verwaal, 2011; Vinchur, Schippmann, Switzer, & Roth, 1998). A study by Churchill et al. (1985) was the first meta-analytic study that identified antecedents to sales performance, based on 116 empirical articles published between 1918 and 1982, and became one of the most cited articles in marketing research (Leigh, Bolman, & Comer, 2001). Using the taxonomy provided by Churchill et al., they categorized the antecedents into six different categories of factors that influence the performance of salespeople: (1) aptitude (e.g., dispositional traits such as personalities, personal

concern, identity, and general cognitive abilities), (2) skill level, (3) motivation, (4) role perceptions, (5) personal traits (e.g., demographic, psychological characteristics, experiences, social status, and lifestyle), and (6) organizational and environmental variables.

Since the seminal meta-analytic study by Churchill et al. (1985), subsequent studies have continued to investigate various factors influencing sales performance, such as personality (e.g., Barrick, Stewart, & Piotrowski, 2002; Conte & Gintoft, 2005; Furnham & Fudge, 2008; Ricks & Veneziano, 1998; Salgado, 1997; Sitser, van der Linden, & Born, 2013; Vinchur et al., 1998); knowledge, skills, and abilities (e.g., Ahearne et al., 2005; Ko & Dennis, 2004; Sharma, Levy, & Evanschitzky, 2007; Vinchur et al., 1998); adaptive selling behavior (e.g., Franke & Park, 2006; Giacobbe, Jackson, Crosby, & Bridges, 2006; Jaramillo & Grisaffe, 2009; Kara, Andaleeb, Turan, & Cabuk, 2013; Park & Holloway, 2003); motivation (e.g., Amyx & Alford, 2005; Jaramillo & Grisaffe, 2009; VandeWalle, Brown, Cron, & Slocum, 1999); leadership (e.g., Ahearne et al., 2005; Butler Jr. & Reese, 1991; Jaramillo, Grisaffe, Chonko, & Roberts, 2009; Mackenzie, Podsakoff, & Rich, 2001; Mathieu, Ahearne, & Taylor, 2007; Shannahan, Bush, & Shannahan, 2013); and climate (e.g., McKay, Avery, & Morris, 2008, 2009; Schwepker, 2013).

Given the enormity of the body of literature on sales performance that has accumulated since 1985, Verbeke et al. (2011) conducted a recent meta-analysis on drivers of sales performance. Because the meta-analysis by Churchill et al. (1985) included empirical studies up to 1982, Verbeke et al. included empirical studies published during the 25 years since then and compared their findings to those of Churchill et al. Although they refined the classification categories used by Churchill et al., their findings overlapped with those of the earlier study. Although several individual variables, such as skills, aptitude, role perception, and motivation, were significant predictors of sales performance, the results of these meta-analyses indicated that

these trait-like individual characteristics were not the most important predictors of sales performance, and “influenceable” individual characteristics (elsewhere labeled “state-like” individual differences) might be better predictors of sales performance than trait-like individual characteristics.

Psychological empowerment is one of “state-like” individual differences (Maynard et al., 2012; Thomas & Velthouse, 1990) that has recently attracted interest in the sales literature (Anderson et al., 2007; Anderson & Huang, 2006), but only two empirical studies have been conducted on this topic to date. The first study (Martin & Bush, 2006) examined the effect of psychological empowerment on sales performance. Using 313 sales representatives in the United States, the study showed that psychological empowerment was significantly related to subjective performance levels of salespeople as well as customer-oriented selling behavior. Similarly, Auh, Menguc, and Jung (2014) examined the relationship between psychological empowerment and performance in a sales context. Using data from 484 frontline employees from 65 dealers of a South Korean multinational automobile company, the results showed that psychological empowerment had a positive relationship with service-oriented citizenship behaviors. Although these two studies have shown a positive relationship between psychological empowerment and performance in a sales context, further research is needed to determine how psychological empowerment is related to sales performance.

To summarize, there are several gaps in psychological empowerment, creativity, and sales performance literatures, and these gaps are not mutually independent. Accordingly, in the current study, I propose a multilevel moderated mediation model to better understand the effects of psychological empowerment on individual effectiveness using individual creativity and sales performance. Specifically, I directly examine the mediating mechanism that links psychological

empowerment to both individual creativity and sales performance. Additionally, I also investigate the moderating effects of team contextual factors, such as a team leader's supportive behaviors, team climate for creativity, and team climate for excellence, on the mediating relationships based on the social learning theory (Bandura, 1977, 1986). In doing so, I attempt to advance research on psychological empowerment, creativity, and sales performance by filling the gaps addressed above.

### **Hypotheses Development**

Psychological empowerment is a psychological state manifested in four cognitions that reflect an individual's orientation to his or her work role (Spreitzer, 1995; Thomas & Velthouse, 1990): meaning, competence, self-determination, and impact. According to the self-determination theory (SDT; Deci & Ryan, 1985), individuals are willing to engage in a task when they experience meaningfulness, competence, self-determination, and impact at work. Thus, numerous empirical studies on psychological empowerment have provided evidence on the positive relationship between psychological empowerment and performance (see Maynard et al., 2012 for the review). A recent meta-analysis by Seibert and colleagues (2011) found that the positive relationship between psychological empowerment and performance was .27.

A few researchers have recently started to empirically examine the positive relationship between psychological empowerment and creativity as well. For example, based on data from 385 employees in multiple organizations in China, Sun et al. (2012) found a positive relationship between psychological empowerment and individual creativity ( $r = .24, p < .05$ ;  $b = 11, p < .10$ ). In a similar vein, the positive relationship between psychological empowerment and individual creativity was also supported ( $r = .48, p < .001$ ;  $\beta = .29, p < .01$ ) with the sample of German employees (Schermuly, Meyer, & Dämmer, 2013). Although these studies have provided

empirical evidence supporting the relationships between psychological empowerment and outcomes, such as individual creativity and performance, little is yet known about mechanisms and boundary conditions of these relationships. Thus, these hypotheses are discussed below.

### ***Psychological Empowerment and Engagement in Creative Processes***

As reviewed above, ECP refers to an individual's engagement in creativity-relevant cognitive activities that are composed of (1) problem/opportunity identification, (2) information gathering and search, (3) idea generation, and (4) idea evaluation (Amabile, 1983; Reiter-Palmon & Illies, 2004; Rietzschel et al., 2009), and ECP involves individuals behaviorally, cognitively, and emotionally attempt to produce creative outcomes (Kahn, 1990). Consequently, the levels of ECP can vary among individuals (Drazin et al., 1999). That is, individuals may choose to engage in creative processes minimally or in a full manner (Ford, 1996).

In this study, I theorize that psychological empowerment influences ECP because psychological empowerment affects individual's choice to engage, initiate, and persist in work-related behavior (Conger & Kanungo, 1988; Thomas & Velthouse, 1990). First, I argue that ECP can be influenced by meaning because individuals are more likely to engage in their work when they believe that their work is personally meaningful (Kahn, 1990). The more individuals perceive that their work is aligned with their beliefs, values, and behaviors (i.e., high levels of meaning), the more they are likely to be motivated, involved, and energized about their work (Kanter, 1968; Spreitzer, Kizilos, & Nason, 1997). This, in turn, causes individuals to spend extra time and effort in ECP (e.g., understanding problems from different perspectives, searching for a variety of information from multiple sources, generating a number of ideas by combining information and forming new associations, and evaluating the ideas based on their utility), as opposed to simply using the most validated and direct pathway to the goal.

Competence, another dimension of psychological empowerment, can also influence ECP. The rationale for positing a positive relationship between competence and ECP is derived from the social cognitive theory developed by Bandura (1977, 1982). The concept of self-efficacy (i.e., competence) has been useful in understanding creativity (Tierney & Farmer, 2002) in the way it influences the motivation and ability to engage in specific behaviors and the pursuit of certain tasks (Bandura, 1977). For instance, Ford (1996) proposed in his theoretical model of creativity that self-efficacy is a key motivation component in developing creative action. More specifically, self-efficacy promotes engagement of certain cognitive processes (Stevens & Gist, 1997), such as information searches (Wood, George-Falvy, & Debowksi, 2001), idea generation (Axtell, Holman, Unsworth, & Wall, 2000; Locke, Frederick, Lee, & Bobko, 1984), and analytical/evaluative thinking (Cervone, Jiwani, & Wood, 1991).

Arguments can also be made for a positive relationship between self-determination and ECP. According to the self-determination theory (Deci & Ryan, 1985), individuals fully endorse the actions in which they are engaged when they have autonomy or control over how they do their work. Additionally, research in creativity has shown that self-determination enhances individual creativity. When individuals perceive that they have autonomy or control over how they complete assigned tasks (high levels of self-determination), they are free of extraneous concerns and are more likely to take risks. This enables them to search for a wide range of information from multiple sources, explore new cognitive pathways, and play with ideas (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Csikszentmihalyi, 1996; Shalley, 1991). In addition, individuals tend to focus on problems and ideas longer and more persistently when they have a sense of ownership and control over their work and ideas (Spreitzer, 1995). Several empirical studies have supported the idea that autonomy and freedom have a positive association



with idea generation (e.g., Axtell et al., 2000; Liu et al., 2010; Shalley et al., 2000). In a qualitative study, Unsworth and Clegg (2010) examined why individuals are engaged in creative processes. From semi-structured interviews with 65 engineers, the authors found that autonomy repeatedly emerged as an important cue for employees to make decisions in engaging in creative processes. Based on the interviews, the authors concluded that autonomy is a resource that allows individuals to feel capable and, therefore, to feel that the effort engaging in creative processes is worthwhile.

Impact, the last dimension of psychological empowerment, can also influence ECP. When individuals perceive that they have an impact on their work, they are convinced that they can significantly influence organizational outcomes (Thomas & Velthouse, 1990), which can drive them to fully engage in their work. Specifically, when individuals perceive that their job requirements are important and influential to the organization, they are more likely to engage in understanding problems from different perspective and generate novel ideas by linking information from multiple sources (Gilson & Shalley, 2004).

Taken together, the arguments above provide support for the positive relationship between all four dimensions of psychological empowerment and ECP. Given that these four cognitions of psychological empowerment should be combined additively to form an overall construct of psychological empowerment, and the highest level of psychological empowerment emerges only when the four cognitions are all high, I hypothesize the relationship between psychological empowerment and ECP as follows:

*Hypothesis 1: Psychological empowerment is positively related to engagement in creative processes.*

***Engagement in Creative Processes, Individual Creativity and Individual Sales Performance***

ECP has long been assumed to be a vital driver of organizational effectiveness (Gilson & Shalley, 2004; Hackman & Morris, 1975; Kanter, 1988). ECP is a necessary, but not sufficient, condition for the occurrence of creative outcomes (Drazin et al., 1999); yet, for creative outcomes to emerge, individuals must engage in several creative activities, such as problem identification, information gathering and search, idea generation, and idea evaluation (Lubart, 2000–2001; Shalley, 1991). As creative processes “determine the flexibility with which cognitive pathways are explored, the attention given to particular aspects of the task, and the extent to which a particular pathway is followed in pursuit of a solution” (Amabile, 1996, p. 95), individuals who engage in creative processes are more likely to produce the creative outcome and performance. To support the relationship, a few recent studies have started to empirically test the relationship between ECP and individual effectiveness. For example, using a sample of undergraduates, Taggar (2002) first found support for the positive relationship between creativity-relevant processes and an individual creative outcome. Later, studies with field samples also provided empirical support that ECP is positively related to individual creative outcome (e.g., Zhang & Bartol, 2010b) and performance (e.g., Gong, Huang, & Farh, 2009). Consistent with their findings, I argue that ECP is also positively related to individual creativity and performance in a sales context. For instance, when salespeople engage in creative processes — identify the customers’ problems to a greater extent, gather as much information as possible, generate more ideas and alternatives, and evaluate and modify ideas and alternatives — they can provide unique and useful portfolios that fit each customer’s need. Also, by engaging in creative processes, salespeople are creative in delivering sales pitches to customers, building customer rapport, and handling objections, thereby increasing sales performance. However, if salespeople do not engage in creative processes during their sales activities, they tend to stick with the

already established portfolios rather than combining products/services in different ways. In this case, the service salespeople may provide similar products/services to customers who may have different needs or problems, lowering their creative outcome as well as providing less desirable solutions to customers. Therefore, I hypothesize the following:

*Hypothesis 2: Engagement in creative processes is positively related to (a) individual creativity and (b) individual sales performance.*

### ***The Mediating Role of Engagement in Creative Processes on Psychological Empowerment – Individual Creativity and Individual Sales Performance Relationships***

The theoretical development so far suggests that psychological empowerment increases ECP. ECP, in turn, improves individual creativity and individual sales performance and thus mediates the relationships that psychological empowerment has with individual creativity and individual sales performance. That is, psychologically empowered individuals are more likely to produce higher creative outcomes (Ahearne et al., 2005; Chen et al., 2007; Spreitzer, 1995) and higher sales performances (Sun et al., 2012; Zhang & Bartol, 2010b). Psychologically empowered individuals may engage in creative processes because each dimension of psychological empowerment leads to ECP (H1). First, ECP is influenced by meaning because individuals are more likely to be motivated, involved, and engaged in their work when they believe that their work is meaningful (Kahn, 1990; Spreitzer et al., 1997). Second, ECP is also affected by competence because competence promote engagement of cognitive processes such as information search (Wood et al., 2001), idea generation (Axtell et al., 2000; Locke et al., 1984), and idea evaluation (Cervone et al., 1991). Third, self-determination leads to ECP because individuals are more likely to search for new information from different sources, consider a wide range of ideas (Amabile et al., 1994; Csikszentmihalyi, 1996; Shalley, 1991) when they have

control over their work. Fourth, impact also increases ECP because individuals are more likely to engage in identifying problems from multiple perspectives and coming up with creative ideas by connecting information from different sources when they perceive that they have an impact on their work (Gilson & Shalley, 2004). ECP, in turn, increases individual creativity (H2a) and individual sales performance (H2b) because ECP has been considered to be a necessary condition for the occurrence of creativity, innovation, and performance (Drazin et al., 1999; Gilson, 2008; Gilson & Shalley, 2004). To sum up the arguments above, I conclude that ECP mediates (a) the positive relationship between psychological empowerment and individual creativity, and (b) the positive relationship between psychological empowerment and individual sales performance. Therefore, following mediation effects are proposed:

*Hypothesis 3: Engagement in creative processes mediates the positive relationship between psychological empowerment and (a) individual creativity and (b) individual sales performance.*

### ***Cross-level Moderating Effects on Individual-level Mediation Relationships***

Thus far, I have hypothesized that ECP serves as a key intervening mechanism that explains the associations between psychological empowerment, individual creativity, and individual sales performance. Yet, in spite of this hypothesized positive association, some of previous studies have shown that the benefit of psychological empowerment is not always achieved (Coleman, 1996; Lawler et al., 2001). Specifically, Lawler and colleagues (2001) found that more than 25% of the surveyed companies did not recognize the benefit of psychological empowerment in their organizations. Based on an interview with a manager at PG&E, Coleman (1996) also found that psychological empowerment alone does not always yield positive results. One potential explanation for these findings is that psychological empowerment is not a

consistent personality trait but rather a psychological state influenced by contextual factors. Therefore, drawing upon the social learning theory (Bandura, 1977, 1986), I will explore how team context factors, such as a team leader's supportive behavior, team climate for creativity, and team climate for excellence moderate different aspects of the linkage from psychological empowerment to ECP to individual creativity and individual sales performance.

### ***The Moderating Role of a Team Leader's Supportive Behavior on Psychological Empowerment – Engagement in Creative Processes Relationship***

According to the social learning theory (Bandura, 1977, 1986), individuals learn how to behave through a role-modeling process by observing and emulating the behaviors of salient environmental stimuli. In organizations, a team leader often has the most direct contact with his or her subordinates as well as higher status and power than subordinates. Thus, the team leader is an influential source of salient informational stimuli to employees, regarding what behaviors are important and appropriate to potentially model. The team leader can also influence his or her subordinates' behaviors by rewarding appropriate behaviors and disciplining inappropriate behaviors because the team leader has the power to administer both rewards and punishments (Bandura, 1977, 1986). Specifically, when the team leader's behavior is supportive, the team leader shows concern for subordinates' feelings and needs, encourages them to voice their own concerns, allows for sufficient time for creative problem solving, provides informational and nonjudgmental feedback about their work, and rewards employees for creative behaviors (Deci et al., 1989; Oldham & Cummings, 1996; Reiter-Palmon & Illies, 2004; Shalley & Gilson, 2004). Due to this social learning process, for individuals who are highly empowered, the team leader's supportive behavior prompts empowered individuals to feel that their own way of doing things are encouraged, supported, and rewarded. In addition, highly empowered individuals are able to

get adequate resources needed for being creative from their supportive leaders, thus reinforcing and encouraging individuals' tendencies to engage in creative processes.

When individuals perceive that their leader is supportive, they are also less likely to be concerned about making mistakes and less resentful about having additional responsibilities; therefore, they are likely to engage in creative processes longer and more persistently. In contrast, when their team leader's behavior is not supportive, individuals might perceive that their thoughts and actions are not welcome and are being constrained so that they are less motivated to engage in creative processes.

Taking the above together, I hypothesize a moderating effect of team leader's supportive behavior on the relationship between psychological empowerment and ECP as follows:

*Hypothesis 4: Team leader's supportive behavior moderates the positive relationship between psychological empowerment and engagement in creative processes, such that the relationship will be more positive when a team leader's supportive behavior is high than low.*

### ***The Moderating Role of Team Climate for Creativity and Excellence on Engagement in Creative Processes – Individual Creativity and Individual Sales Performance Relationships***

According to the social learning theory (Bandura, 1977, 1986), another salient environmental stimulus through which individuals learn appropriate behaviors by way of a role-modeling process is climate. Climate is generally defined as “the shared perceptions of employees concerning the practices, procedures, and kinds of behaviors that get rewarded and supported in a particular setting” (Schneider, 1990, p. 384) and provides an important source of information (Hackman, 1992). Because multiple climates exist and are related to specific outcomes at different levels (Katz-Navon, Naveh, & Stern, 2005; Schneider, Smith, Taylor, &

Fleenor, 1998), researchers have recently focused on particular facet-specific climates at specific levels in order to get a better understanding of their influence on individual effectiveness (Kuenzi & Schminke, 2009). Thus, for this study, I choose two different types of team climate — team climate for creativity<sup>2</sup> and team climate for excellence (Anderson & West, 1998; Eisenbeiss, van Knippenberg, & Boerner, 2008) — as moderators that may affect the relationships between ECP and individual creativity and individual sales performance.

Team climate for creativity is defined as “the expectation, approval and practical support of attempts to introduce new and improved ways of doing things” (West, 1990, p. 315), and team climate for excellence (also called task orientation) is defined as a shared concern with “excellence of quality of task performance” (West, 1990, p. 313). In a study by Anderson and West (1998), team climate for creativity was significantly related to overall innovation and novelty, while team climate for excellence was significantly related to administrative effectiveness. Because different climates direct employees’ behaviors differently by signaling to employees what is valued, expected, and rewarded the most (Schneider, 1990) and employees conform to the expectations of the team they are in to satisfy their need for social approval (Blau, 1960), different climates should moderate different relationships. For example, as team climate for creativity signals employees that creative behaviors are desired, emphasized, and valued, employees are likely to take more risks, put more effort toward exploring new cognitive pathways, and play with diverse ideas. Therefore, a high level of creative outcome is more likely to occur when employees perceive their team climate as supportive for creativity. This can be

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<sup>2</sup> The term used in Anderson and West’s (1998) work is *climate for innovation*, not climate for creativity. However, climate for innovation also captures climate for creativity in their conceptualization because innovation involves both idea generation (i.e., creativity) and idea implementation. Therefore, some researchers focus on the climate for creativity aspect of Anderson and West’s (1998) climate for innovation construct and renamed it as climate for creativity (e.g., Gong et al., 2013). Following such studies, I also use climate for creativity, not climate for innovation, because one of the outcomes of interest is creativity, not innovation.

further supported by previous studies on goal-setting and creativity. Shalley (1991, 1995) found that assigning a creativity goal increased individual creative outcome. Her findings suggest that a creativity goal motivates individuals to direct their attention and effort toward producing novel and appropriate ideas by clarifying behavior-outcome contingencies.

Team climate for excellence, however, is not specifically related to creative outcomes but concerns achieving a high level of performance. Thus, when team climate for excellence is high, employees are more likely to monitor and appraise whether ideas meet the standard of high performance, carefully select the most promising ideas, and reject the less useful ideas based on their quality and practicality, which results in higher individual sales performance. Therefore, I propose:

*Hypothesis 5a: Team climate for creativity moderates the positive relationship between engagement in creative processes and individual creativity, such that the relationship will be more positive when team climate for creativity is high than low.*

*Hypothesis 5b: Team climate for excellence moderates the positive relationship between engagement in creative processes and individual sales performance, such that the relationship will be more positive when team climate for excellence is high than low.*

### ***An Integrative Moderated Mediation Model***

So far, I have proposed the mediating effect of ECP and moderating effects of the team leader's supportive behavior, team climate for creativity, and team climate for excellence: ECP mediates the relationship between psychological empowerment and individual creativity (Hypothesis 3a), ECP mediates the relationship between psychological empowerment and



individual sales performance (Hypothesis 3b), team leader's supportive behavior moderates the positive relationship between psychological empowerment and ECP (Hypothesis 4), team climate for creativity moderates the positive relationship between ECP and individual creativity (Hypothesis 5a), and team climate for excellence moderates the positive relationship between ECP and individual sales performance (Hypothesis 5b). The theoretical rationales behind these hypotheses further suggest an integrative moderated mediation model. First, the theoretical rationales behind Hypotheses 3a, 3b, and 4 indicate that by strengthening the relationship between psychological empowerment and ECP, team leader's supportive behavior will influence the mediating effect of psychological empowerment on individual creativity through ECP and the mediating effect of psychological empowerment on individual sales performance through ECP. Likewise, the theoretical rationales behind Hypothesis 3a and 5a indicate that by strengthening the relationship between ECP and individual creativity, team climate for creativity will influence the mediating effect of psychological empowerment on individual creativity through ECP. Lastly, the theoretical rationales behind Hypothesis 3b and 5b indicate that by strengthening the relationship between ECP and individual sales performance, team climate for excellence will influence the mediating effect of psychological empowerment on individual sales performance through ECP. Taken together, I propose four sets of an integrated moderated mediation model as follows:

*Hypothesis 6a: Team leader's supportive behavior moderates the indirect positive effect of psychological empowerment on individual creativity via ECP, such that the indirect positive effect is stronger when a team leader's supportive behavior is high than low.*

*Hypothesis 6b: Team leader's supportive behavior moderates the indirect positive effect of psychological empowerment on individual sales performance via ECP, such that the indirect positive effect is stronger when a team leader's supportive behavior is high than low.*

*Hypothesis 7a: Team climate for creativity moderates the indirect positive effect of psychological empowerment on individual creativity via ECP, such that the indirect positive effect is stronger when team climate for creativity is high than low.*

*Hypothesis 7b: Team climate for excellence moderates the indirect positive effect of psychological empowerment on individual sales performance via ECP, such that the indirect positive effect is stronger when team climate for excellence is high than low.*

A summary of all the hypotheses is presented in Table 1.

Table 1. Summary of Hypotheses

Hypothesis 1	Psychological empowerment is positively related to engagement in creative processes.
Hypothesis 2a	Engagement in creative processes is positively related to individual creativity.
Hypothesis 2b	Engagement in creative processes is positively related to individual sales performance.
Hypothesis 3a	Engagement in creative processes mediates the positive relationship between psychological empowerment and individual creativity.
Hypothesis 3b	Engagement in creative processes mediates the positive relationship between psychological empowerment and individual sales performance.
Hypothesis 4	Team leader's supportive behavior moderates the positive relationship between psychological empowerment and engagement in creative processes, such that the relationship will be more positive when a team leader's supportive behavior is high than low.
Hypothesis 5a	Team climate for creativity moderates the positive relationship between engagement in creative processes and individual creativity, such that the relationship will be more positive when team climate for creativity is high than low.
Hypothesis 5b	Team climate for excellence moderates the positive relationship between engagement in creative processes and individual sales performance, such that the relationship will be more positive when team climate for excellence is high than low.
Hypothesis 6a	Team leader's supportive behavior moderates the indirect positive effect of psychological empowerment on individual creativity via ECP, such that the indirect positive effect is stronger when a team leader's supportive behavior is high than low.
Hypothesis 6b	Team leader's supportive behavior moderates the indirect positive effect of psychological empowerment on individual sales performance via ECP, such that the indirect positive effect is stronger when a team leader's supportive behavior is high than low.
Hypothesis 7a	Team climate for creativity moderates the indirect positive effect of psychological empowerment on individual creativity via ECP, such that the indirect positive effect is stronger when team climate for creativity is high than low.
Hypothesis 7b	Team climate for excellence moderates the indirect positive effect of psychological empowerment on individual sales performance via ECP, such that the indirect positive effect is stronger when team climate for excellence is high than low.

## CHAPTER 3. METHODS

This chapter describes the research setting in which this study was conducted, the participants, the data collection procedures, a prior power analysis, participants, measures for the variables included in this study, missing data, and the analytic strategy that was used to test the hypotheses.

### Research Setting

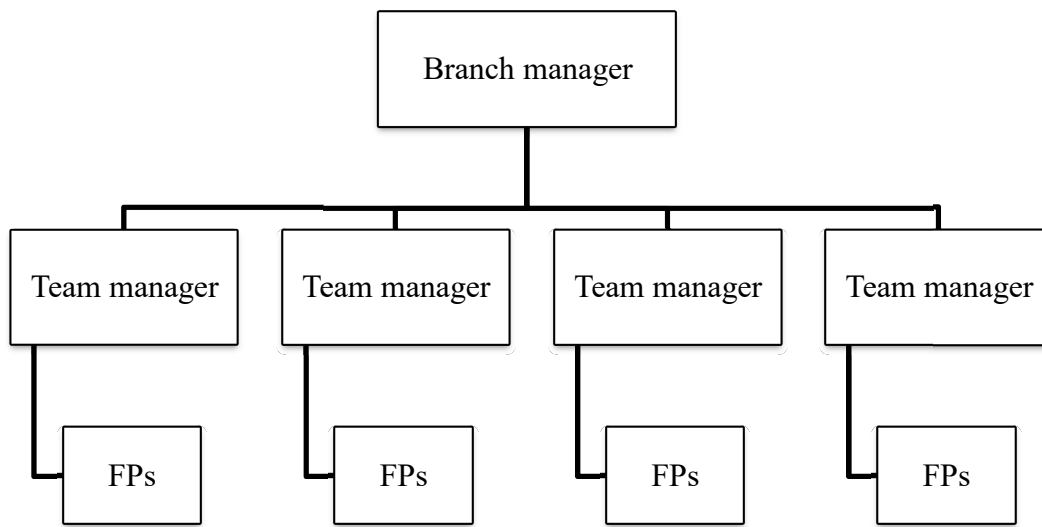
Data were collected from one of the major life insurance companies in South Korea. The company offers customers not only insurance products but also comprehensive asset management services (financial planning service), ranging from long-term investments, real estate and taxes to advice on inheritances, risk, and retirement management. The company has six sales channels: Financial Planners (FPs), Group Financial Planners (GFPs), Life Advisors (LAs), Average Marketing (AM), Tele-Cyber Marketing (TCM), Business-to-Business, and Bancassurance. Among these, FPs and GFPs are full-time professional sales representatives who are under exclusive contract with the company, and the majority of sales volumes (about 60% – 70% of total sales) at the company are determined by FPs. Therefore, FPs are the main focus of this study because they are the major employees that determine total sales performance in the organization.

Both creativity and sales performance are considered to be critical to FPs. An interview with the HR representative revealed that FPs are rewarded based on both creativity and sales performance. Specifically, FPs receive a commission on the sale performance they make by selling the products to clients each month. The better their sales volumes are, the more commission they receive. Also, the company awards promotions on a monthly and quarterly basis in order for FPs to promote creativity such as acquiring new clients, uncovering customers'

latent needs, and creating their own customer bases. Furthermore, the value of recruiting and retaining creative employees is explicitly stated on the company website.

In this company, FPs work at branches, which are based on geographical regions. At each branch, the number of FPs ranges from 17 to 50 with the average being about 30 employees, and FPs belong to specific teams. Typically, each branch includes one branch manager, an average of four team managers, and seven to eight FPs on average under each team manager (see Figure 2).

Figure 2. Organizational Structure of Research Setting



Team managers are promoted among FPs at each branch, based on their excellence in sales performance. Team managers are responsible for promoting FPs' creativity and sales performance by increasing knowledge (know-how) sharing among FPs, providing education/training programs to FPs, and so on.

### **Data Collection Procedures**

I initially contacted the firm's executive in the HR department in January 2014 and sent the research proposal that described this study and the potential benefits to the company. After several e-mails, telephone conversations, and face-to-face meetings with the HR staff, the

company agreed to conduct this research with their employees (i.e., FPs). When conducting the survey, I visited branches to distribute the questionnaires along with envelopes, and asked participants to put the completed surveys in a sealed envelope in order to assure confidentiality. All completed surveys were placed in sealed envelopes, returned to the office clerks at branches who were not involved with this study, and collected by me one or two weeks later.

I obtained the data from multiple sources wherever possible. As shown in Table 2, individual sales performance was collected from the company’s archival records, and individual creativity was assessed by team leaders. Both team climate for creativity and excellence were also collected by team leaders. The remaining variables (psychological empowerment, ECP, team leader’s supportive behavior) were collected by FPs.

Table 2. Data Collection Sources for Study Variables

Categories	Sources			
	Variables	FPs	Team Leaders	Archival Records
Input	Psychological empowerment	X		
Mediator	Engagement in creative processes	X		
Moderators	Team leader’s supportive behavior	X		
	Team climate for creativity		X	
	Team climate for excellence		X	
Outcomes	Individual creativity		X	
	Individual sales performance			X

### **A Prior Power Analysis**

A priori analysis was conducted to determine an appropriate sample size in order to achieve sufficient power to determine the relationships hypothesized in this study. Specifically, I followed the guidelines of Mathieu, Aguinis, Culpepper, and Chen (2012) to estimate the power of the hypothesized model because this study includes the cross-level interaction effects. Using  $\alpha = .05$ , a power of .80, and effect sizes based on previous studies, the appropriate sample size to detect the hypotheses was shown to be about 90 teams. Because a meta-analysis on the survey response rates in organizational research indicated that an average response rate for surveys that are completed on a drop-in basis or in person is just over 60% (Baruch & Holtom, 2008), the target sample size was approximately 150 teams.

### **Participants and Response Rate**

Currently, the total number of FPs working at the company is about 23,000. Among the FPs, 10% of them are team managers – that is, there are about 2,401 teams. Because it was not plausible to administer the survey to all teams, I asked HR staff to randomly select about 150 teams (i.e., the target sample size calculated based on the prior power analysis) from the organization to voluntarily participate in this research in order to achieve a representative distribution of employee responses. Of the 1,302 questionnaires distributed to employees and team leaders in 151 teams, 814 were returned for a response rate of 62.5%, which was consistent with the result of the meta-analysis on the survey response rates. However, employees whose survey could not be matched to their team leader's ratings and archival performance data were eliminated. Additionally, work units with fewer than three employees were eliminated because this study examines not only individual-level effects but also moderating effects of team-level variables. So, the final sample consisted of 598 employees of 113 teams. The average team size

was 7.09, and ranged from 3 to 13 employees. All of the respondents were female because only females are hired for the FP position in this organization. Among employees, the average age was 49.17 years with a standard deviation of 7.96 (range of 23 to 80 years), and the average organizational tenure was 6.22 years with a standard deviation of 7.27 (range of .08 to 41.50 years). Education levels of the employees varied from less than a high school diploma to a master's degree, with the most frequently indicated education level being a high school diploma (58.79%). Among team leaders, the average age was 49.59 years with a standard deviation of 4.94 (range of 34 to 62 years), and the average organizational tenure was 11.40 years with a standard deviation of 6.74 (range of 1.50 to 32.83 years). Education levels of the team leaders varied from less than a high school diploma to a master's degree, with the most frequently indicated education level being a high school diploma (60%).

### **Measures**

In this study, all survey variables were measured using a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The measures used in this study are described below, and items for each of these measures are listed in Appendix A. All survey items were administered in Korean, following the commonly used translation-back translation procedure (Brislin, 1980).

***Psychological empowerment.*** Psychological empowerment was measured using Spreitzer's (1995) 12-item scale. Spreitzer (1995) developed and validated a multidimensional scale of psychological empowerment that consists of four dimensions — meaning, competence, self-determination, and impact — and several studies supported that a four-factor model fits psychological empowerment measure at the individual level (Carless, 2004; Huang et al., 2010; Spreitzer, 1995). Sample items included: “The work I do is very important to me” (meaning), “I



am confident about my ability to do my job” (competence), “I have significant autonomy in determining how I do my job” (self-determination), and “My impact on what happens in my department is large” (impact). Given that I focused on overall psychological empowerment, and in line with previous research (Chen et al., 2007; Seibert et al., 2011; Spreitzer, 1995), an overall score was calculated for psychological empowerment scale by averaging the four dimensions. The fit indices for four first-order factors plus one second-order factor were excellent [ $\chi^2(50) = 97.00, p < .01; CFI = .99; RMSEA = .04$ ], suggesting that the dimensions reflected the overall scale. The Cronbach’s alpha for the overall scale was .85.

***Engagement in creative processes.*** Engagement in creative processes (ECP) was measured using 14 items adapted from the work of Zhang and Bartol (2010b) and Binnewies, Ohly, and Sonnentag (2007). Zhang and Bartol (2010b) included the first three components of creative processes only (i.e., problem/opportunity identification, information gathering and search, and idea generation) when developing an ECP scale. However, in order to fully capture creative processes as mentioned in Chapter 2, I included the last component of creative processes (i.e., idea evaluation) in defining ECP. Thus, to measure ECP for this study, I combined Zhang and Bartol’s (2010b) 11-item scale on ECP, including the first three components of creative processes, with Binnewies and colleagues’ (2007) three-item scale on idea evaluation. Sample items included: “I spend considerable time trying to understand the nature of the problem” (problem identification), “I consult a wide variety of information” (information gathering and search), “I look for connections with solutions used in seemingly diverse areas” (idea generation), and “I think about all advantages and disadvantages of each alternative to approach the task” (idea evaluation). Given that I focused on overall ECP, and in line with prior research (Zhang & Bartol, 2010b), an overall score was calculated for ECP scale by averaging the four dimensions.

The fit indices for four first-order factors plus one second-order factor were acceptable [ $\chi^2(73) = 324.66$ ,  $p < .01$ ; CFI = .95; RMSEA = .07], suggesting that the dimensions reflected the overall scale. The Cronbach's alpha for the overall scale was .93.

***Team leader's supportive behavior.*** Team leader's supportive behavior was assessed by team members using eight items developed by Oldham and Cummings (1996). Sample items included: "My team leader keeps informed about how employees think and feel about things," "My team leader encourages employees to speak up when they disagree with a decision," and "My team leader refuses to explain his or her actions" (reversed-coded). The Cronbach's alpha for the scale was .91. To test the appropriateness of the aggregation of team leader's supportive behavior measure to the team level, within-group agreement ( $r_{wg(j)}$ ; James, Demaree, & Wolf, 1984; 1993) was calculated. In order to justify aggregation, median  $r_{wg(j)}$  values should be higher than .70. The median value  $r_{wg(j)}$  was .89 (range = 0.00–1.00), and 89.4% of the teams reported an  $r_{wg(j)}$  above the .70 threshold, which is sufficient to support the use of this measure at the team level. Two intra-class correlations (ICCs; James, 1982) were additionally calculated to justify aggregation of the measure. ICC(1) indicates the proportion of variance accounted for by the team, whereas ICC(2) indicates the reliability of team mean differences (Bliese, 2000). The ICC(1) was .08, and the ICC(2) was .32,  $F(112, 598) = 1.47$ ,  $p < .01$ . Both  $r_{wg(j)}$  and ICC values suggested that an aggregate of team leader's supportive behavior is appropriate to use.

***Team climate for creativity and team climate for excellence.*** Both team climate for creativity and team climate for excellence were measured using items from the Team Climate Inventory (TCI) developed by Anderson and West (1998). Team climate for creativity was measured using eight items based on the support for innovation sub-scale of TCI. Support for innovation was originally developed to measure climate for innovation, but five items from the

scale cover climate for creativity, so it was used in previous studies on creativity (e.g., Gong et al., 2013). In Gong and colleagues' study, the correlation between the full scale and the scale with five items only was very high ( $r = .91$ ), thus I used the full scale to measure team climate for creativity. Following their study, all eight items were measured for this study. Sample items included: "People in this team are always searching for fresh, new ways of looking at problems," and "People in the team cooperate in order to help develop and apply new ideas." Team climate for excellence was measured using seven items based on the climate for excellence sub-scale of TCI. Sample items included: "Does the team critically appraise potential weakness in what it is doing in order to achieve the best possible outcome?" and "Is there a real concern among team members that the team should achieve the highest standards of performance?" According to Chen, Mathieu, and Bliese (2004)'s principles of multilevel construct validation, inter-member agreement is not required to be estimated, and aggregate reliability is necessary if applicable because these scales are measured directly by team leaders. The Cronbach's alphas for team climate for creativity and team climate for excellence were .89 and .88, respectively.

***Individual creativity.*** Individual creativity was measured using three items based on Oldham and Cummings (1996), and was rated by team leaders. Note that team leaders' ratings on individual creativity were matched using the identification numbers given to each individual. While commonly used measures of creativity (e.g., George & Zhou, 2001) confuse creative processes with creative outcome, the creativity measure created by Oldham and Cummings (1996) captures the creative outcome only, not the creative behavior. Therefore, in order to differentiate between creative processes and creative outcomes, I chose Oldham and Cumming's creativity items to measure individual creative outcome. Sample items included: "How original is this employee's work? Original work refers to developing ideas, methods, and portfolios that

are totally unique and new to customers/organizations” and “How adaptive and practical is this employee’s work? Adaptive and practical work refers to using existing information or materials to develop ideas, methods, or portfolios that are useful to the customers/organizations.” The Cronbach’s alpha for the scale was .82.

***Individual sales performance.*** Individual sales performance was collected from the company’s HR records. Based on a conversation with the HR manager at the insurance company, I found that there are two major performance indices in evaluating the sales performance of FPs in the Korean insurance industry: the monthly sales volume (in Korean Won) and the number of new contracts per month. Therefore, both objective performance indices were used as a proxy for individual sales performance and were obtained from the company’s archival records for five months after the survey (from August 2014 to December 2014). Because sales figures fluctuate from month to month, I averaged five months of each performance index to even out atypical variability in sales performance (Van Dyne, Jehn, & Cummings, 2002). Then, each of the averaged performance indices was converted to a z score because of the confidential nature.

***Covariates.*** Based on previous studies in creativity and performance (Grant, 2008; Mathieu et al., 2007; Shalley et al., 2004; Zhang & Bartol, 2010b), I included individual characteristics that had been considered critical to individual creativity and individual sales performance: organizational tenure, intrinsic motivation, and individual prior performance. Organizational tenure reflects the length of time individuals have been working at their current organizations, and thus, the time when organizationally relevant skills and knowledge can be accrued. Through organizational tenure, individuals acquire tacit and explicit knowledge about firm-specific procedures and practices, which can ultimately help creativity up to a certain degree (Gilson & Shalley, 2004) and organizational performance (Nonaka, 1994). Further, a

recent meta-analysis showed that organizational tenure was positively related to, although very weakly, creativity and performance (Ng & Feldman, 2010). Therefore, organizational tenure was controlled in this analysis. Another variable controlled in the analysis was intrinsic motivation. Intrinsic motivation is known to be positively related to both creativity (Amabile, 1996; Tierney, Farmer, & Graen, 1999) and performance (Grant, 2008; Karatepe & Tekinkus, 2006) because intrinsic motivation tends to encourage them to be more curious, cognitively flexible, and willing to take risks (Zhou & Shalley, 2003), to persist when experiencing obstacles and challenges (Utman, 1997), and to devote more time and attention to the work (Deci & Ryan, 2000). Intrinsic motivation was measured using four items adapted from the work of Grant (2008). Sample items included: “I am motivated to do my work because I enjoy the work itself” and “I am motivated to do my work because it’s fun.” The Cronbach’s alpha for the scale was .94. Finally, individual prior sales performance was included as another covariate in order to capture the unique effects attributable to psychological empowerment and ECP even after eliminating the effect of the prior sales performance. Individual prior performance is one of the most prominent factors in predicting individual later performance because performance is stable over time (Stewart & Nandkeolyar, 2006). This is especially true for salespeople as their performance levels have been found to be stable over time; this is “attributable to myriad factors, including their individual knowledge, skills, abilities, and other characteristics” (Mathieu et al., 2007, p. 529).

### **Missing Data**

As is the case with any survey data, there was some missing data in this data set. When all the items of the studied variables in my model were considered together (i.e., listwise deletion), 109 out of 595 cases had missing values (17.89%). Two important problems can be caused by the existence of missing data (Newman, 2009). First, it can lead to poor external

validity, which means that the results obtained from the data set with missing data may not be identical to results that would have been obtained from the data set without missing data. Second, it can cause low statistical power; in other words, the data set with missing data may be too small to produce a statistically significant result. Therefore, it is critical to deal with missing data before the analyses.

In general, there are three types of missing data (Rubin, 1976; for more detailed information, see Newman, 2009), described as MCAR (missing completely at random), MAR (missing at random), and MNAR (missing not at random). There are a number of ways to handle missing data. For instance, traditional methods for handling missing data include listwise deletion, pairwise deletion, mean substitution, hot deck imputation, and regression imputation. More recent methods include expectation maximization (EM) algorithm, multiple-group approach, full information maximum likelihood (FIML) estimation, and multiple imputation (MI).

The FIML estimation method was used in handling the missing data in this study because in this case, the data was missing at random. The FIML estimation method allows the researcher to retain the sample size and appropriate standard errors for the parameters, yield smaller errors in parameter estimates, and benefit from greater reductions in parameter error, when the parameter errors are large to begin with (Newman, 2003).

### **Analysis Strategy**

Given that the model in this study is multilevel in nature, consisting of variables at both the individual level and team level, I used the multilevel modeling approach, also known as MLM (Hofmann, 1997; Raudenbush & Bryk, 2002) to test the hypothesized model (i.e., the multilevel moderated mediation model) using HLM 6.0 software. Traditional methods for testing

mediation (e.g., Baron & Kenny, 1986; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Sobel, 1982) are inappropriate in the multilevel setting because these methods assume independence of observations, which is violated when data are hierarchically nested (e.g., individuals nested in teams). Therefore, scholars have proposed an alternative method superior to the traditional methods to assess multilevel mediation, and these methods have been developed mostly within the MLM approach (e.g., Hofmann, 1997; Raudenbush & Bryk, 2002).

MLM is appropriate when analyzing data at multiple levels of analysis, because it enables researchers to model explicitly both within and between group variance, as well as investigate the influence of higher-level of units on lower level outcomes, while maintaining the appropriate level of analysis (Hofmann, 1997). Following the procedures suggested in Raudenbush and Bryk (2002), the effects of both individual- and group-level predictors on ECP, individual creativity, and individual sales performance were assessed by using the intercept- and slope-as-outcome models. The MLM models took the following forms:

$$\text{Level 1: } ECP_{ij} = \beta_{0j} + \beta_{1j}(IM_{ij}) + \beta_{2j}(EMPWR_{ij} - EMPWR_{.j}) + r_{ij} \quad (1)$$

$$\text{Level 2: } \beta_{0j} = \gamma_{00} + \gamma_{01}(LSB) + \gamma_{02}(EMPWR\_mean) + U_{0j} \quad (2)$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20} + \gamma_{21}(LSB)$$

where:

EMPWR= Psychological empowerment,

EMPWR\_mean= The mean score of psychological empowerment,

ECP= Engagement in creative processes,

IM=Intrinsic motivation,

LSB= Team leader's supportive behavior

As illustrated above, equation 1 represents the direct effect of psychological empowerment on ECP (Hypothesis 1), and equations 2 represents the cross-level moderating effects of the team leader's supportive behavior on the relationship between psychological empowerment and ECP (Hypothesis 4).

$$\begin{aligned} \text{Level 1: } IC_{ij} = & \beta_{0j} + \beta_{1j}(IM_{ij}) + \beta_{2j}(\text{PERFP}) + \beta_{3j}(\text{PERF}) + \beta_{4j}(\text{EMPWR}_{ij} - \text{EMPWR}_{.j}) \\ & + \beta_{5j}(\text{ECP}_{ij} - \text{ECP}_{.j}) + r_{ij} \end{aligned} \quad (3)$$

$$\text{Level 2: } \beta_{0j} = \gamma_{00} + \gamma_{01}(\text{CLMTC}) + \gamma_{02}(\text{EMPWR\_mean}) + \gamma_{03}(\text{ECP\_mean}) + U_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

$$\beta_{4j} = \gamma_{40}$$

$$\beta_{5j} = \gamma_{50} + \gamma_{51}(\text{CLMTC}) \quad (4)$$

where:

IC= Individual creativity,

PERFP= Individual prior sales performance,

PERF= Individual sales performance,

CLMTC= Team climate for creativity,

ECP\_mean= The mean score of engagement in creative processes



As shown above, equation 3 represents the mediating effect of ECP on psychological empowerment and on individual creativity (Hypothesis 2a and 3a), and equation 4 represents the cross-level moderating effects of team climate for creativity on the mediating relationships (Hypothesis 5a and 7a).

$$\begin{aligned} \text{Level 1: } \text{PERF}_{ij} = & \beta_{0j} + \beta_{1j}(\text{IM}_{ij}) + \beta_{2j}(\text{PERFP}) + \beta_{3j}(\text{IC}) + \beta_{4j}(\text{EMPWR}_{ij} - \text{EMPWR}_{.j}) \\ & + \beta_{5j}(\text{ECP}_{ij} - \text{ECP}_{.j}) + r_{ij} \end{aligned} \quad (5)$$

$$\begin{aligned} \text{Level 2: } \beta_{0j} = & \gamma_{00} + \gamma_{01}(\text{CLMTE}) + \gamma_{02}(\text{EMPWR\_mean}) + \gamma_{03}(\text{ECP\_mean}) + U_{0j} \\ \beta_{1j} = & \gamma_{10} \\ \beta_{2j} = & \gamma_{20} \\ \beta_{3j} = & \gamma_{30} \\ \beta_{4j} = & \gamma_{40} \\ \beta_{5j} = & \gamma_{50} + \gamma_{51}(\text{CLMTE}) \end{aligned} \quad (6)$$

where:

CLMTE= Team climate for excellence

As set out above, equation 5 represents the mediating effect of ECP on psychological empowerment and on individual sales performance (Hypothesis 2b and 3b), and equations 6 represents the cross-level moderating effects of team climate for excellence on the mediating relationships (Hypothesis 5b and 7b).

$$\text{Level 1: } \text{IC}_{ij} = \beta_{0j} + \beta_{1j}(\text{IM}_{ij}) + \beta_{2j}(\text{PERFP}) + \beta_{3j}(\text{PERF}) + \beta_{4j}(\text{EMPWR}_{ij} - \text{EMPWR}_{.j})$$

$$+ \beta_{5j}(\text{ECP}_{ij}-\text{ECP}_{.j}) + r_{ij} \quad (7)$$

$$\text{Level 2: } \beta_{0j} = \gamma_{00} + \gamma_{01}(\text{LSB}) + \gamma_{02}(\text{EMPWR\_mean}) + \gamma_{03}(\text{ECP\_mean}) + U_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

$$\beta_{4j} = \gamma_{40} + \gamma_{51}(\text{LSB})$$

$$\beta_{5j} = \gamma_{50} \quad (8)$$

$$\begin{aligned} \text{Level 1: } \text{PERF}_{ij} = & \beta_{0j} + \beta_{1j}(\text{IM}_{ij}) + \beta_{2j}(\text{PERFP}) + \beta_{3j}(\text{IC}) + \beta_{4j}(\text{EMPWR}_{ij}-\text{EMPWR}_{.j}) \\ & + \beta_{5j}(\text{ECP}_{ij}-\text{ECP}_{.j}) + r_{ij} \end{aligned} \quad (9)$$

$$\text{Level 2: } \beta_{0j} = \gamma_{00} + \gamma_{01}(\text{LSB}) + \gamma_{02}(\text{EMPWR\_mean}) + \gamma_{03}(\text{ECP\_mean}) + U_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

$$\beta_{4j} = \gamma_{40} + \gamma_{51}(\text{LSB})$$

$$\beta_{5j} = \gamma_{50} \quad (10)$$

Equation 7 and 8 (illustrated above) represent the cross-level moderating effects of the team leader's supportive behavior on the mediating relationship between psychological empowerment and individual creativity via ECP (Hypothesis 6a). Equation 9 and 10 (also illustrated above) represent the cross-level moderating effects of the team leader's supportive behavior on the

mediating relationship between psychological empowerment and individual sales performance via ECP (Hypothesis 6b).

In testing these relationships using the MLM approach, centering individual-level exogenous variables was also an important issue to consider, since different centering options can change the estimation and meaning of the results (Hofmann & Gavin, 1998; Kreft, de Leeuw, & Aiken, 1995). There were three centering options to choose from: (1) raw metric scaling, where no centering takes place and the individual-level exogenous variables are used in their original metrics; (2) grand mean centering, where the grand mean of the individual-level exogenous variable is subtracted from each individual's original metric; and (3) group mean centering where the group mean is subtracted from each individual's original metric, and reintroducing the mean score to the group-level equation.

When testing the multilevel moderated mediation model (like the ones hypothesized in this study), researchers are interested in determining whether individual-level mediation relationships (i.e., the within-group slope) vary as a function of the group-level (i.e., the between-group level) moderators. As such, it is critical to obtain an unbiased estimate of the within-group slope. While raw metric scaling and grand mean centering can provide a biased estimate of the within-group slope (Bryk & Raudenbush, 1992), group mean centering always produces an unbiased estimate of the within group slope (Raudenbush, 1989). Thus, I group mean centered all of the individual-level independent variables (Hofmann & Gavin, 1998; Hofmann, Griffin, & Gavin, 2000) and included the mean scores of these variables in the group-level model (Mathieu, Aquinis, Culpepeer, & Chen, 2012; Preacher et al., 2010). In other words, the group mean centered scores of psychological empowerment (i.e.,  $EMPWR_{ij} - EMPWR_{.j}$ ) and ECP (i.e.,  $ECP_{ij} - ECP_{.j}$ ) were included in the level-1 equations, while the mean scores of

psychological empowerment (i.e., EMPWR\_mean) and ECP (i.e., ECP\_mean) were introduced in the level-2 equations.

## CHAPTER 4. RESULTS

This chapter presents the results of the data analysis, and consists of three sections. First, the descriptive statistics and correlations among study variables are presented. Next, the results of the confirmatory factor analysis are described. Lastly, the results of the hypothesis tests are presented.

### Descriptive Statistics and Correlations

The means, standard deviations, internal reliability, and correlations for all the variables in this study are presented in Table 3. Internal reliability (Cronbach's alphas) ranged from .72 to .93 (shown in parentheses), demonstrating that all the measures used in this study were reliable (Nunnally & Bernstein, 1994). Among the covariates, neither organizational tenure nor intrinsic motivation were significantly correlated with individual creativity. However, organizational tenure was positively correlated with individual sales performance ( $r = .15, p < .01$  for the number of new contracts), and intrinsic motivation was positively correlated with ECP ( $r = .42, p < .01$ ) and individual sales performance ( $r = .20, p < .01$  for the sales volume;  $r = .22, p < .01$  for the number of new contracts). As expected, both individual prior sales performance indices were significantly correlated with individual creativity ( $r = .23, p < .01$  for the prior sales volume;  $r = .25, p < .01$  for the prior number of new contracts), the sales volume ( $r = .74, p < .01$  for the prior sales volume;  $r = .58, p < .01$  for the prior number of new contracts), and the number of new contracts ( $r = .63, p < .01$  for the prior sales volume;  $r = .73, p < .01$  for the prior number of new contracts).

The correlations among the majority of the variables were in the expected directions, thus providing preliminary support for the hypothesized relationships. For instance, psychological empowerment was positively correlated with ECP ( $r = .42, p < .01$ ), individual creativity ( $r = .10,$

Table 3. Means, Standard Deviations, Internal Reliabilities, and Correlations Among Studied Variables

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
<i>Individual-level (N=598)</i>														
1. Organizational tenure	6.19	7.26	–											
2. Intrinsic motivation	3.76	0.91	.10**	(.93)										
3. Sales volume (prior)	0.00	1.00	-.03	.21**	–									
4. Number of new contracts (prior)	0.00	1.00	.10*	.22**	.76**	–								
5. Psychological empowerment	3.85	0.56	.13**	.50**	.18**	.22**	(.85)							
6. Engagement in creative processes	3.72	0.62	.00	.42**	.07	.06	.42**	(.93)						
7. Individual creativity	3.58	0.83	.07	.04	.21**	.22**	.10*	.14**	(.72)					
8. Sales volume	0.00	1.00	-.01	.20**	.73**	.56**	.19**	.12**	.19**	–				
9. Number of new contracts	0.00	1.00	.15**	.22**	.60**	.71**	.26**	.12**	.24**	.69**	–			
<i>Team-level (N=113)</i>														
10. Team leader's supportive behavior	3.83	0.54	-.10*	.12**	.05	.09*	.08*	.10*	.11**	.07	.09*	(.91)		
11. Team climate for creativity	3.50	0.70	-.08	.05	.08	.08	.04	.01	.10*	.08*	.09*	.19**	(.89)	
12. Team climate for excellence	3.57	0.65	-.07	.04	.12**	.11*	.08*	.05	.19**	.12**	.13**	.23**	.82**	(.88)

*Note.* Cross-level correlations were calculated by assigning average group scores to all members and are not adjusted for lack of independence. Internal reliabilities are reported in the parentheses on the diagonal. Thus, significance levels should be interpreted cautiously. \*  $p < .05$ ; \*\*  $p < .01$

$p < .05$ ), the sales volume ( $r = .19, p < .01$ ), and the number of new contracts ( $r = .26, p < .01$ ). ECP was also positively correlated with individual creativity ( $r = .14, p < .01$ ), the sales volume ( $r = .12, p < .01$ ), and the number of new contracts ( $r = .12, p < .01$ ).

### **Confirmatory Factor Analysis**

Given that some variables (i.e., psychological empowerment, ECP, and the team leader's supportive behavior) were collected from the same source (i.e., employees), a confirmatory factor analysis (CFA) using Amos 17.0 software was conducted to determine whether the variables loaded on the latent constructs as hypothesized, and whether the latent constructs were empirically distinct from each other. Following previous research on psychological empowerment (Chen et al., 2007) and ECP (Zhang & Bartol, 2010b), scores on the four dimensions of psychological empowerment served as indicators for the first latent variable, and the four dimensions of the ECP measures served as indicators for the second latent variable.

Next, the eight team leader's supportive behavior items served as indicators for the third latent variable. To evaluate the goodness-of-fit of the three-factor model, the chi-square value was reported first. However, the chi-square value is sensitive to sample size, such that the chi-square value is more likely to be highly significant, but trivial in absolute magnitude when the sample size is large. Therefore, different types of fit indices were further used to assess the model fit: the comparative fit index (CFI; Bentler, 1990), the root mean square error of approximation (RMSEA; Hu & Bentler, 1999), and the standardized root mean square residual (SRMR; Hu & Bentler, 1999).

The CFI is an incremental fit index that assesses the relative improvement in the fit of a hypothesized model, as compared with a baseline (uncorrelated indicators) model, with values below .90 indicating a poor fit; values between .90 and .95 indicating an acceptable fit; and

values of .95 and above indicating an excellent fit (Bentler, 1990). Meanwhile, the RMSEA is a measure of the average standardized residual per degree of freedom for a model, and is designed to estimate the lack of fit in a model as compared with a perfect (saturated) model. In addition, SRMR is a measure of the mean absolute value of the covariance residuals, with values above .10 indicating a poor fit; values between .08 and .10 indicating an acceptable fit; and values less than .08 indicating an excellent fit (Browne & Cudeck, 1993; Kline, 1998).

Chi-square different tests ( $\Delta\chi^2$ ) were further conducted to verify whether the three-factor model demonstrated a superior model fit as compared to alternative nested models (two-factor or one-factor models).

Results showed that the expected three-factor model provided an excellent fit to the data [ $\chi^2$  (101) = 178.74,  $p < .01$ ; CFI = .97; RMSEA = .04; SRMR=.04], and all the indicators loaded significantly ( $p < .01$ ) onto the corresponding hypothesized latent variables. Moreover, the three-factor model fit significantly better than the following: a two-factor model, collapsing the team leader's supportive behavior and psychological empowerment [ $\chi^2$  (102) = 601.99,  $p < .01$ ; CFI = .83; RMSEA = .09; SRMR=.25;  $\Delta\chi^2$  (1) = 423.25,  $p < .01$ ]; a two-factor model collapsing the team leader's supportive behavior, and ECP [ $\chi^2$  (102) = 509.43,  $p < .01$ ; CFI = .86; RMSEA = .08; SRMR=.23;  $\Delta\chi^2$  (1) = 330.68,  $p < .01$ ]; a two-factor model collapsing psychological empowerment and ECP [ $\chi^2$  (102) = 560.34,  $p < .01$ ; CFI = .84; RMSEA = .09; SRMR=.16;  $\Delta\chi^2$  (1) = 381.59,  $p < .01$ ]; and a one-factor model, with all variables loaded on a single factor [ $\chi^2$  (104) = 671.51,  $p < .01$ ; CFI = .81; RMSEA = .10; SRMR=.31;  $\Delta\chi^2$  (3) = 492.76,  $p < .01$ ].

As anticipated, these results demonstrated that the measures captured distinctive constructs. The fit indices for the various models are summarized in Table 4.

Although ECP and individual creativity constructs were collected from different sources,



a CFA was also conducted to demonstrate the discriminant validity of these two constructs, because ECP and individual creativity are conceptually related. Results revealed that the two-factor model provided an excellent fit to the data [ $\chi^2 (13) = 22.71, n.s.$ ; CFI = .99; RMSEA = .04; SRMR=.03], and provided a significantly better fit than the one-factor model [ $\chi^2 (14) = 359.80, p < .01$ ; CFI = .79; RMSEA = .60; SRMR=.31;  $\Delta\chi^2 (1) = 337.09, p < .01$ ], supporting that ECP and individual creativity are distinct constructs. The fit indices for the two models are summarized in Table 5.

Finally, because team climate for creativity and team climate for excellence were collected from team leaders and are highly correlated with each other ( $r = .82$ ), a CFA was conducted to determine whether team climate for creativity and team climate for excellence were distinct constructs. Again, the results indicated that the two-factor model provided an acceptable fit to the data [ $\chi^2 (89) = 145.36, p < .01$ ; CFI = .93; RMSEA = .08; SRMR=.05], and provided a significantly better fit than the one-factor model [ $\chi^2 (90) = 176.39, p < .01$ ; CFI = .90; RMSEA = .09; SRMR=.17;  $\Delta\chi^2 (1) = 31.03, p < .01$ ]. The fit indices for the two models are summarized in Table 6.

Table 4. Summary of Confirmatory Factor Analysis among Survey Variables from Employees

<b>Model</b>	<b><math>\chi^2</math></b>	<b><i>df</i></b>	<b>CFI</b>	<b>RMSEA</b>	<b>SRMR</b>	<b><math>\Delta\chi^2</math></b>
1. Three-factor model	178.74	101	0.97	0.04	0.04	
2. Two-factor model collapsing team leader's supportive behavior and psychological empowerment	601.99	102	0.83	0.09	0.25	(1)=423.25, p<.01
3. Two-factor model collapsing team leader's supportive behavior and ECP	509.43	102	0.86	0.08	0.23	(1)=330.68, p<.01
4. Two-factor model collapsing psychological empowerment and ECP	560.34	102	0.84	0.09	0.16	(1)=381.59, p<.01
5. One-factor model	671.51	104	0.81	0.10	0.31	(3)=492.76, p<.01

Table 5. Summary of Confirmatory Factor Analysis between Engagement in Creative Processes and Individual Creativity

<b>Model</b>	<b><math>\chi^2</math></b>	<b><i>df</i></b>	<b>CFI</b>	<b>RMSEA</b>	<b>SRMR</b>	<b><math>\Delta\chi^2</math></b>
1. Two-factor model	22.71	13	0.99	0.04	0.03	
2. One-factor model	359.80	14	0.79	0.60	0.31	(1)=337.09, p<.01

Table 6. Summary of Confirmatory Factor Analysis between Team Climate for Creativity and Team Climate for Excellence

<b>Model</b>	<b><math>\chi^2</math></b>	<b><i>df</i></b>	<b>CFI</b>	<b>RMSEA</b>	<b>SRMR</b>	<b><math>\Delta\chi^2</math></b>
1. Two-factor model	145.36	89	0.93	0.08	0.05	
2. One-factor model	176.39	90	0.90	0.09	0.17	(1)=31.03, p<.01

## Hypothesis Tests

Given the multilevel nature of our study, I first computed a null model for our individual-level outcome variable to examine the systematic variability of between-group variance (Raudenbush & Bryk, 2002). The null model indicated that 7.72% of the total variance in ECP resided between groups, 35.39% of the total variance in individual creativity resided between groups, and 9.24% of the total variance in individual sales performance resided between groups.

Results from the tests of the multilevel moderated mediation model are summarized in Table 7. As shown in model 1, 5a, and 5b, several covariates were significantly related to individual-level variables as expected.<sup>3</sup> For example, intrinsic motivation was significantly related to ECP ( $\gamma = .26$ , S.E. = .03,  $p < .01$ ) and individual sales performance ( $\gamma = .07$ , S.E. = .03,  $p < .01$ ), but not to individual creativity ( $\gamma = .00$ , S.E. = .03, *n.s.*). Individual prior sales performance was significantly related to individual creativity ( $\gamma = .14$ , S.E. = .05,  $p < .01$ ) and individual sales performance ( $\gamma = .70$ , S.E. = .05,  $p < .01$ ). Also, because two dependent variables - individual creativity and individual sales performance - are correlated with each other, individual creativity was included as an additional covariate, when testing the effects on individual sales performance, and vice versa; individual creativity was significantly related to individual sales performance ( $\gamma = .07$ , S.E. = .02,  $p < .01$ ) and individual sales performance was significantly related to individual creativity ( $\gamma = .18$ , S.E. = .04,  $p < .01$ ).

Hypothesis 1 proposed the positive relationship between psychological empowerment and ECP (X → M relationship of the 1-1-1 multilevel mediation model). As shown in model 2, the results indicated that psychological empowerment was positively related to ECP ( $\gamma = .16$ , S.E.

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<sup>3</sup> Including or excluding organizational tenure as a covariate in the model did not meaningfully change the findings, and organizational tenure was not significantly correlated with other variables. Therefore, organizational tenure was excluded in the analyses.

Table 7. MLM Results of the Multilevel Moderated Mediation Model

Level and variable	Engagement in creative processes			
	Model 1	Model 2	Model 3	Model 4
<b><i>Level 1 (N = 598)</i></b>				
Intercept	3.72 (0.03)**	3.72 (0.03)**	3.72 (0.02)**	3.72 (0.02)**
Intrinsic motivation (control)	0.26 (0.03)**	0.17 (0.03)**	0.17 (0.03)**	0.17 (0.03)**
Individual prior sales performance (control)				
Individual sales performance (control)				
Individual creativity (control)				
Psychological empowerment (EMPWR)		0.16 (0.03)**	0.16 (0.03)**	0.16 (0.03)**
Engagement in creative processes (ECP)				
<b><i>Level 2 (N = 113)</i></b>				
Team leader's supportive behavior (LSB)			0.03 (0.03)	0.03 (0.03)
Team climate for creativity (CLMTC)				
Team climate for excellence (CLMTE)				
<b><i>Cross-level interactions</i></b>				
LSB x EMPWR				-0.02 (0.03)
CLMTC x ECP				
CLMTE x ECP				
$\sim R^2$	0.17	0.24	0.24	0.24
Deviance	1014.80	980.83	983.44	989.86
$df_{intercept}$	112	111	110	109

Note. Values in parentheses are standard errors; entries are unstandardized coefficients. \*  $p < .05$ , two-tailed. \*\*  $p < .01$ , two-tailed.

Table 7. MLM Results of the Multilevel Moderated Mediation Model (continued)

Level and variable	Individual creativity				
	Model 5a	Model 6a	Model 7a	Model 8a	Model 9a
<b><i>Level 1 (N = 598)</i></b>					
Intercept	3.57 (0.06)**	3.57 (0.06)**	3.57 (0.06)**	3.57 (0.06)**	3.57 (0.06)**
Intrinsic motivation (control)	0.00 (0.03)	-0.03(0.03)	-0.06 (0.02)*	-0.06 (0.02)*	-0.07 (0.03)**
Individual prior sales performance (control)	0.14 (0.05)**	0.14 (0.05)**	0.16 (0.05)**	0.16 (0.05)**	0.16 (0.05)**
Individual sales performance (control)	0.18 (0.04)**	0.17 (0.04)**	0.15 (0.04)**	0.15 (0.04)**	0.15 (0.04)**
Individual creativity (control)					
Psychological empowerment (EMPWR)		0.06 (0.03)*	0.04 (0.03)	0.04 (0.03)	0.05 (0.03)
Engagement in creative processes (ECP)			0.09 (0.04)*	0.09 (0.04)*	0.10 (0.04)**
<b><i>Level 2 (N = 113)</i></b>					
Team leader's supportive behavior (LSB)					
Team climate for creativity (CLMTC)				0.08 (0.06)	0.08 (0.06)
Team climate for excellence (CLMTE)					
<b><i>Cross-level interactions</i></b>					
LSB x EMPWR					
CLMTC x ECP					-0.08 (0.03)**
CLMTE x ECP					
$\sim R^2$	0.02	0.02	0.04	0.05	0.05
Deviance	1303.13	1308.70	1306.37	1306.39	1304.86
$df_{intercept}$	112	111	110	109	108

Note. Values in parentheses are standard errors; entries are unstandardized coefficients. \*  $p < .05$ , two-tailed. \*\*  $p < .01$ , two-tailed.

Table 7. MLM Results of the Multilevel Moderated Mediation Model (continued)

Level and variable	Individual sales performance				
	Model 5b	Model 6b	Model 7b	Model 8b	Model 9b
<b><i>Level 1 (N = 598)</i></b>					
Intercept	0.00 (0.03)	0.00 (0.03)	0.00 (0.03)	0.00 (0.03)	0.00 (0.03)
Intrinsic motivation (control)	0.07 (0.03)**	0.03 (0.03)	0.02 (0.03)	0.02 (0.03)	0.02 (0.03)
Individual prior sales performance (control)	0.70 (0.05)**	0.69 (0.04)**	0.69 (0.04)**	0.69 (0.04)**	0.69 (0.04)**
Individual sales performance (control)					
Individual creativity (control)	0.07 (0.02)**	0.07 (0.02)**	0.06 (0.02)*	0.06 (0.03)*	0.06 (0.03)*
Psychological empowerment (EMPWR)		0.10 (0.03)**	0.07 (0.03)*	0.07 (0.03)*	0.07 (0.03)*
Engagement in creative processes (ECP)			0.09 (0.03)**	0.09 (0.03)**	0.09 (0.03)**
<b><i>Level 2 (N = 113)</i></b>					
Team leader's supportive behavior (LSB)					
Team climate for creativity (CLMTC)					
Team climate for excellence (CLMTE)				0.03 (0.03)	0.03 (0.03)
<b><i>Cross-level interactions</i></b>					
LSB x EMPWR					
CLMTC x ECP					
CLMTE x ECP					-0.02 (0.03)
$\sim R^2$	0.57	0.58	0.59	0.59	0.59
Deviance	1097.47	1097.97	1094.28	1096.75	1103.24
$df_{intercept}$	112	111	110	109	108

Note. Values in parentheses are standard errors; entries are unstandardized coefficients. \*  $p < .05$ , two-tailed. \*\*  $p < .01$ , two-tailed.

= .03,  $p < .01$ ), supporting Hypothesis 1.

Hypothesis 2a and 2b stated that ECP was positively related to individual creativity and individual sales performance, respectively (M  $\rightarrow$  Y relationships of the 1-1-1 multilevel mediation model). As shown in model 7a and 7b, the results demonstrated that both the relationship between ECP and individual creativity ( $\gamma = .09$ , S.E. = .04,  $p < .05$ ) and the relationship between ECP and individual sales performance ( $\gamma = .09$ , S.E. = .03,  $p < .01$ ) were significantly positive. Thus, both Hypothesis 2a and Hypothesis 2b were supported.

Hypothesis 3a and 3b predicted that ECP mediated the relationship between psychological empowerment and individual creativity, and the relationship between psychological empowerment and individual sales performance, respectively (X  $\rightarrow$  M  $\rightarrow$  Y relationships of the 1-1-1 multilevel mediation model). As shown in model 6a and 7a, ECP was significantly related to individual creativity, and the significant relationship between psychological empowerment and individual creativity ( $\gamma = .06$ , S.E. = .03,  $p < .05$ ) became non-significant when ECP was included in the model ( $\gamma = .04$ , S.E. = .03, *n.s.*). Similarly, in model 6b and 7b, ECP was significantly related to individual sales performance, and the significant relationship between psychological empowerment and individual sales performance ( $\gamma = .10$ , S.E. = .03,  $p < .01$ ) became weaker when ECP was included in the model ( $\gamma = .07$ , S.E. = .03,  $p < .05$ ). Taken together, these results supported both Hypothesis 3a and 3b.

Hypothesis 4 proposed that team leader's supportive behavior moderates the positive relationship between psychological empowerment and ECP, such that the relationship is more positive when team leader's supportive behavior is high than low. However, as shown in model 4, team leader's supportive behavior did not significantly moderate the positive relationship between psychological empowerment and ECP ( $\gamma = -.02$ , S.E. = .03, *n.s.*). Therefore, Hypothesis

4 was not supported.

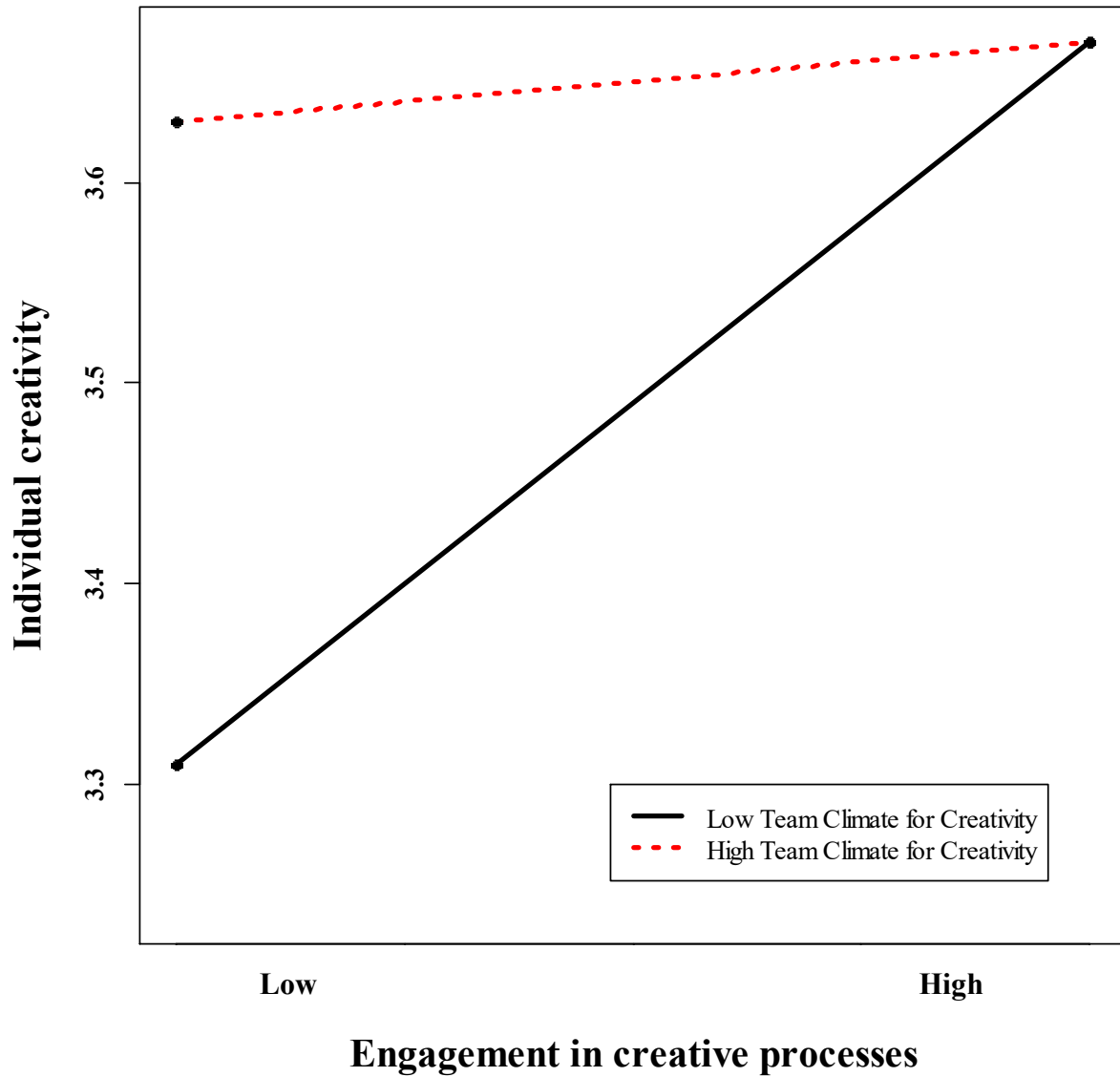
Hypothesis 5a predicted that team climate for creativity moderates the positive relationship between ECP and individual creativity, such that the relationship is more positive when team climate for creativity is high than low. As shown in model 9a, team climate for creativity significantly moderated the positive relationship between ECP and individual creativity ( $\gamma = -.08$ ,  $SE = .03$ ,  $p < .01$ ). To better understand the nature of the moderation, I used simple slopes computations, and graphed the interaction using “high” (1 SD above the mean;  $\gamma = .18$ ,  $S.E. = .04$ ,  $p < .01$ ) and “low” (1 SD below the mean;  $\gamma = .02$ ,  $S.E. = .04$ , *n.s.*) levels of team climate for creativity, following the procedure recommended by Aiken and West (1991). As shown in Figure 3, although the moderating effect was significant, the pattern of the moderation was not in the expected directions. Thus, Hypothesis 5a was not supported.

Hypothesis 5b predicted that team climate for excellence moderates the positive relationship between ECP and individual sales performance, such that the relationship is more positive when team climate for excellence is high than low. As shown in model 9b, team climate for excellence did not significantly moderate the positive relationship between ECP and individual sales performance ( $\gamma = -.02$ ,  $SE = .03$ , *n.s.*), so Hypothesis 5b was not supported.

Hypothesis 6a, 6b, 7a, and 7b proposed several moderated mediating effects. Specifically, Hypothesis 6a and 6b posited the moderating effect of team leader’s supportive behavior on the mediating relationships between psychological empowerment and individual creativity and individual sales performance, respectively. Hypothesis 7a proposed the moderating effect of team climate for creativity on the mediating relationship between psychological empowerment and individual creativity, while Hypothesis 7b predicted the moderating effect of team climate for excellence on the mediating relationship between psychological empowerment



Figure 3. Team Climate for Creativity and ECP Interaction on Individual Creativity

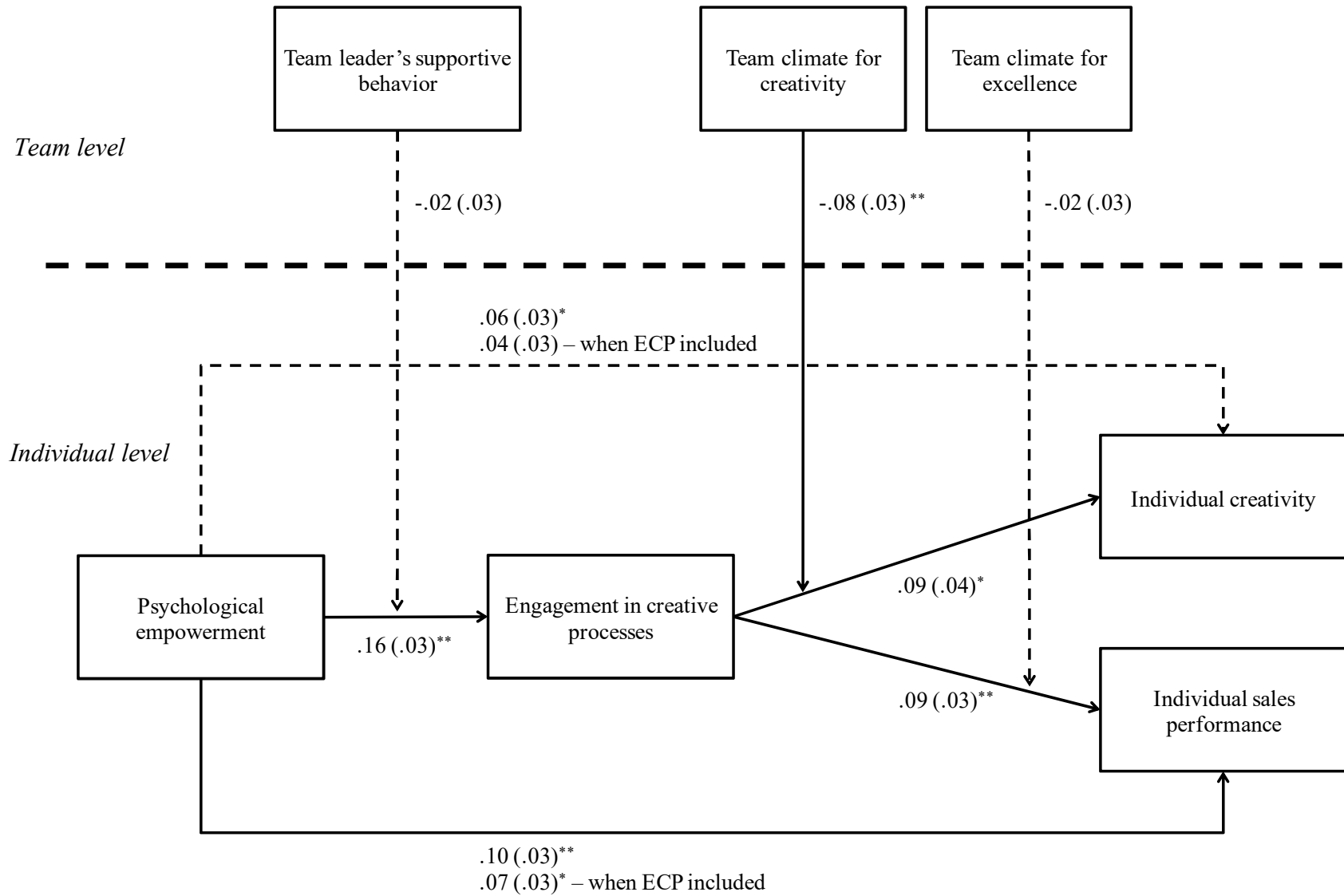


and individual sales performance. In order to test the moderated mediating effects, I used the Monte Carlo method (a form of parametric bootstrapping) for constructing 95% confidence intervals (CI) for indirect effects, based on the recommendation by Bauer, Preacher, and Gil (2006). In estimating the CI, 20,000 iterations were created using the interactive tool developed by Preacher and Selig (2010). Scholars have advocated using bootstrapping tests for multilevel mediation effects (e.g., MacKinnon, Lockwood, & Williams, 2004), particularly for variables

that are not normally distributed (Pituch & Staepleton, 2008). Because the moderating effects of team leader's supportive behavior and team climate for excellence were not significant, Hypothesis 6a, 6b, and 7b were not supported. Therefore, the indirect effects were not estimated for these relationships. However, because the moderating effect of team climate for creativity was significant, I tested the indirect cross-level effect of psychological empowerment on individual creativity via ECP (Hypothesis 7a) at "high" (1 SD above the mean) and "low" (1 SD below the mean) levels of team climate for creativity. The results indicated that the indirect cross-level effect on individual creativity was significant and positive when team climate for creativity was low [.005, .053] ( $\gamma = .17$ , S.E. = .05,  $p < .05$ ) but not significant when team climate for creativity was high [-.018, .025]. However, again, Hypothesis 7b was not supported because the patterns of the indirect effect were not as expected.

In total, the overall hypothesized model accounted for approximately 24% of the total variance in ECP, 5% of the total variance in individual creativity, and 59% of the total variance in individual sales performance. The paths of the hypothesized model are summarized in Figure 4.

Figure 4. Results of the Multilevel Moderated Mediation Model Paths



## **CHAPTER 5. DISCUSSION**

The purpose of this chapter is to discuss the findings of this study; it is composed of four sections. First, an overview of the findings is presented. Next, the theoretical implications of the study are discussed, followed by the practical implications of the study. Then, the limitations and future direction of the study are explored. Lastly, the conclusion of this study is provided.

### **Overview of the Findings**

There are two main goals in this study. First, by integrating the literature on psychological empowerment (Conger & Kanungo, 1988; Spreitzer, 1995; Thomas & Velthouse, 1990) and creativity (Amabile, 1983, 1996; Drazin et al., 1999; Woodman et al., 1993), this study examines how ECP mediates the effects of psychological empowerment on individual creativity and individual sales performance. In addition, based on the social learning theory (Bandura, 1977, 1986), this study further examines several moderating effects on the mediating relationships: The moderating effect of a team leader's supportive behavior on the relationship between psychological empowerment and ECP, the moderating effect of team climate for creativity on the relationship between ECP and individual creativity, and the moderating effect of team climate for excellence on the relationship between ECP and individual sales performance. Based on the data collected from 598 employees in 113 teams at one of the major life insurance companies in South Korea, the hypotheses of this study were tested using MLM approach.

Hypothesis 1 predicted that psychological empowerment was positively related to ECP, and the results provided support for the positive relationship. Consistent with Hypothesis 2a and 2b, ECP was found to be positively related to individual creativity, as well as individual sales performance. This finding is consistent with the limited previous work that examines the relationship between ECP and individual creativity (e.g., Tagger, 2002; Zhang & Bartol, 2010b)

and individual performance (e.g., Gong et al., 2009; Wang & Netemeyer, 2004), thus providing further support for the theoretical model by several creativity researchers (e.g., Amabile, 1996; Drazin et al., 1999; Gilson, 2008). Hypothesis 3a predicted a mediation effect of ECP on the relationship between psychological empowerment and individual creativity, while Hypothesis 3b predicted a mediation effect of ECP on the relationship between psychological empowerment and individual sales performance. The results provided support for these hypotheses. The results relating to Hypothesis 3a showed that ECP fully mediated the positive relationship between psychological empowerment and individual creativity. The results of Hypothesis 3b suggested that ECP partially mediated the positive relationship between psychological empowerment and individual sales performance. Hence, both Hypothesis 3a and 3b were supported.

Hypothesis 4, 5a, and 5b concerned the several moderating effects of the relationships on psychological empowerment, ECP, individual creativity, and individual sales performance. Hypothesis 4 predicted that the team leader's supportive behavior moderated the relationship between psychological empowerment and ECP, however, the results did not support this hypothesis. This finding was surprising because a number of studies of creativity have provided support for the positive effect of a leader's behavior on creativity (e.g., Oldham & Cummings, 1996; Reiter-Palmon & Illies, 2004; Shalley & Gilson, 2004). Hypothesis 5a stated that team climate for creativity moderated the positive relationship between ECP and individual creativity, while Hypothesis 5b stated that team climate for excellence moderated the positive relationship between ECP and individual sales performance. The results indicated that the moderating effect of team climate for excellence was not significant (Hypothesis 5b not supported), however, the moderating effect of team climate for excellence was significant. Opposite to what was hypothesized, individuals with low levels of ECP produced high levels of individual creative

outcome as the level of team climate for creativity became higher, whereas individuals with high levels of ECP produced high levels of individual creative outcome regardless of the level of team climate for creativity (Hypothesis 5a not supported).

The literature on person-organization fit (P-O fit; Kristof, 1996; Muchinsky & Monahan, 1987) may help shed light on the above-mentioned unexpected finding. According to the literature, P-O fit can be conceptualized mainly in two different ways: supplementary fit and complementary fit. Supplementary fit occurs when a person “supplements, embellishes, or possesses characteristics which are similar to other individuals” in an environment (Muchinsky & Monahan, 1987, p. 269), and complementary fit occurs “when a person’s characteristics ‘make whole’ the environment or add to it what is missing” (Muchinsky & Monahan, 1987, p. 271). While supplementary fit can be explained based on Schneider’s (1987) attraction-selection-attribution (ASA) framework, complementary fit can be explained by drawing from a needs-supplies perspective (Kristof, 1996). Although my hypothesis on the moderating effect of team climates for creativity on the relationship between ECP and individual creativity was line with the supplementary fit approach, the finding was actually more consistent with the complementary fit approach. According to the needs-supplies perspective, the organization provides physical, financial, and psychological supplies that are demanded by employees. When these organizational supplies fill the gap in employee’s characteristics, a complementary fit exists. In my findings, the team climate for creativity helped individuals who are not able to be highly engaged in creative processes to generate creative outcomes. This means that organizational supplies (i.e., team climate for creativity in this study) fill the gap that individuals with low levels of ECP do not have. Those who are highly engaged in creative processes may not need the supplies that the teams provide because they already have enough resources to generate

creative outcomes.

The remaining hypotheses concerned the several integrated moderated mediating relationships. Hypothesis 6a and 6b proposed the moderating effect of the team leader's supportive behavior on (a) the indirect effect of psychological empowerment on individual creativity via ECP and (b) the indirect effect of psychological empowerment on individual sales performance via ECP. Hypothesis 7a predicted that that team climate for creativity moderated the indirect effect of psychological empowerment on individual creativity via ECP, while Hypothesis 7b predicted that team climate for excellence moderated the indirect effect of psychological empowerment on individual sales performance via ECP. Because the moderating effects of the team leader's supportive behavior and team climate for excellence were not significant, Hypothesis 6a, 6b, and 7b were not supported. Although, the indirect effect was significantly positive when team climate for creativity was low but was not significant when team climate for creativity was high, these results were opposite to the hypothesized direction. Thus, Hypothesis 7a was not supported, either.

The insignificant moderating findings above may be due to the small percentage of the variance in ECP and individual sales performance that resided between groups. For instance, only 7.72% and 9.24% of total variance in ECP and individual sales performance resided between groups, whereas 35.39% of the total variance in individual creativity resided between groups. If there is very small between-group variance in certain dependent variables, it would be difficult to find the significant group-level effects. Instead, these dependent variables would be explained better by individual-level factors. This may explain the findings in this study, which showed the significant cross-level effects on individual creativity, but did not show significant cross-level effects on ECP and individual sales performance. Another reason for the insignificant

moderating effects may be due to the nature of the sample in the present study. When talking with the HR staff at the insurance company where this study was conducted, I realized that employees spent time with their team leaders and team members only about one hour per day prior to starting their daily sales activities. Because of the nature of the insurance industry, employees tend to interact more frequently and spend more time with customers. According to the social learning theory (Bandura, 1977, 1986), subordinates learn how to behave through a role-modeling process by observing and emulating the behaviors of their team leaders or their coworkers. However, in order to observe and mimic the behaviors, employees need to have more frequent and direct interactions with their team leaders and their coworkers. When the interaction with their team leaders and their coworkers is limited, the impact of team context factors is not likely to be strong.

In sum, the findings in this study provided empirical support for the mediating effects of ECP on the relationship between psychological empowerment and individual outcomes such as creativity and performance, but did not provide empirical support for the moderating effects of team leader's supportive behavior, team climate for creativity, or team climate for excellence (see Table 8).



Table 8. Summary of All Hypotheses Results

	Hypothesis	Results
H1	Psychological empowerment is positively related to engagement in creative processes.	Supported
H2a	Engagement in creative processes is positively related to individual creativity.	Supported
H2b	Engagement in creative processes is positively related to individual sales performance.	Supported
H3a	Engagement in creative processes mediates the positive relationship between psychological empowerment and individual creativity.	Supported
H3b	Engagement in creative processes mediates the positive relationship between psychological empowerment and individual sales performance.	Supported
H4	Team leader's supportive behavior moderates the positive relationship between psychological empowerment and engagement in creative processes, such that the relationship will be more positive when a team leader's supportive behavior is high than low.	Not supported
H5a	Team climate for creativity moderates the positive relationship between engagement in creative processes and individual creativity, such that the relationship will be more positive when team climate for creativity is high than low.	Not supported
H5b	Team climate for excellence moderates the positive relationship between engagement in creative processes and individual sales performance, such that the relationship will be more positive when team climate for excellence is high than low.	Not supported
H6a	Team leader's supportive behavior moderates the indirect positive effect of psychological empowerment on individual creativity via ECP, such that the indirect positive effect is stronger when a team leader's supportive behavior is high than low.	Not supported
H6b	Team leader's supportive behavior moderates the indirect positive effect of psychological empowerment on individual sales performance via ECP, such that the indirect positive effect is stronger when a team leader's supportive behavior is high than low.	Not supported
H7a	Team climate for creativity moderates the indirect positive effect of psychological empowerment on individual creativity via ECP, such that the indirect positive effect is stronger when team climate for creativity is high than low.	Not supported
H7b	Team climate for excellence moderates the indirect positive effect of psychological empowerment on individual sales performance via ECP, such that the indirect positive effect is stronger when team climate for excellence is high than low.	Not supported

## Theoretical Implications

By proposing and testing the multilevel moderated mediation model, the present study has several theoretical implications with regard to the psychological empowerment and creativity literature. First, this study advances the psychological empowerment literature by expanding the nomological network. While the majority of studies in the psychological empowerment literature have examined the direct effects of psychological empowerment on various outcomes, little work has been done to identify variables that mediate the effects (Maynard et al., 2012). As far as the author is aware, this study is the first study to explore the “black box,” by examining a mediating variable that influences the effects of psychological empowerment on various individual outcomes. One exception is Zhang and Bartol (2012b), who identified the mediating effect of ECP on the relationship between psychological empowerment and individual creativity. The present study builds on their work by examining the mediating effect of ECP, not only on individual creativity, but also on another outcome such as individual sales performance. The study findings also showed that ECP mediated not only the relationship between psychological empowerment and individual creativity, but also the relationship between psychological empowerment and individual sales performance. Specifically, the findings suggested that ECP *positively* mediated both the relationship between psychological empowerment and individual creativity, and also the relationship between psychological empowerment and individual sales performance, thus shedding light on “bright” aspects of psychological empowerment.

Second, this study theoretically and empirically validates a conceptualization of creativity as two distinct constructs, that is, it differentiates creativity as a process from creativity as an outcome. A recent review of creativity (Montag et al., 2012) emphasized the importance of explicitly distinguishing between creative processes and creative outcomes. Similar to the

challenges previously faced in performance research, the research on creativity also faces a criterion problem. Both the widely used definition of creativity (e.g., Amabile, 1996) and the frequently used measures of creativity (e.g., George & Zhou, 2001) confound the creative processes with creative outcomes (Montag et al., 2012). In this study, I conceptually and empirically separated creative processes and creative outcomes, and empirically tested whether they were distinct from each other. Consistent with my expectations, results of CFA provided strong support for distinguishing between creative processes and creative outcomes. As such, my findings take an important step forward in the efforts to tease apart these conceptually distinct constructs. Furthermore, despite its importance there has been no consistent measure of creative processes (i.e., ECP in this study). For instance, Gilson and Shalley (2004) developed the measure of ECP based on the pre-survey interview, and this measure tended to exclusively focus on the idea generation component of creative processes. Zhang and Bartol (2012b) addressed ECP as a broader construct by including not only the idea generation component, but also the problem identification and information search components of creative processes. However, these two measures are not able to fully capture the construct because idea evaluation is also an important component in defining the construct of ECP (Amabile, 1983; Reiter-Palmon & Illies, 2004; Rietzschel et al., 2009). Therefore, this study advances the creativity literature by addressing ECP as a construct that includes all four components of creative processes - (1) problem/opportunity identification, (2) information gathering and search, (3) idea generation, and (4) idea evaluation (Amabile, 1983; Montag et al., 2012; Reiter-Palmon & Illies, 2004; Rietzschel et al., 2009).

Third, the current study contributes to the creativity literature by examining the effects of ECP on various individual outcomes. Although creativity is conceptualized as both a process and

an outcome, the majority of studies in the creativity literature have considered creativity as a outcome based on the assumption that creative processes lead to positive outcomes (James, Clark, & Cropanzano, 1999; Mumford, 2003). Thus, little is known about the effects of ECP on other individual outcomes (George, 2007; Gilson, 2008). Consistent with previous empirical studies, ECP was positively related to individual creativity (e.g., Taggar, 2002; Zhang & Bartol, 2012b), and individual sales performance (e.g., Gong et al., 2009; Martinaityte & Sacramento, 2013; Wang & Netemeyer, 2004).

Fourth, this study contributes to both the psychological empowerment and creativity literature, by investigating the boundary conditions of the relationships among psychological empowerment, ECP, individual creativity, and individual sales performance. In the psychological empowerment literature, there is a lack of research examining contextual factors that moderate the relationships between psychological empowerment and individual outcomes. Similarly, in the creativity literature, little is known regarding what contextual factors serve as moderators of the relationship between ECP and individual outcomes. By showing the moderating effects of team climate for creativity on the relationship between ECP and individual creativity, the results emphasize the importance of taking into consideration the effect of contextual factors in this relationship.

### **Practical Implications**

In addition to the theoretical implications, this study has two important practical implications for practitioners who are interested in creating conditions for psychologically empowered employees to enhance their creativity and job performance. First, managers should encourage psychologically empowered employees to engage in creative processes if they are interested in enhancing employee's creativity and job performance. Up until now, while the

benefits of psychological empowerment have been widely studied, limited work has examined the mechanism through which psychological empowerment relates to individual effectiveness although (Maynard et al., 2012). By showing engagement in creative processes as a mediator, the results in this study proved that psychologically empowered employees exhibit increased creativity and higher job performance through their engagement in creative processes.

Second, the results from this study provide insights for managers on how to form contextual environments that can enhance individual creativity. Indeed, the results of this study suggest that individuals who cannot be highly engaged in creative processes may still generate high levels of individual creative outcomes when team climate is supportive of creativity. On the other hand, individuals who are highly engaged in creative processes produce higher creative outcomes, regardless of the high or low levels of team climate for creativity. Therefore, it is possible to make the case that creating a supportive climate for creativity would be beneficial to employees, especially those who are not good at engaging in creative processes.

### **Limitations and Future Directions**

Notwithstanding its theoretical and practical implications, this study has a number of limitations. First, given the study's cross-sectional design (except the individual sales performance data), the present study does not allow for conclusions about causality among the variables. Therefore, future research should use longitudinal designs to determine the direction of causality. For instance, although I propose that psychological empowerment is related to ECP, which in turn leads to individual creativity in this study, it might be the case that employees who produce more creative outcomes are more likely to be psychologically empowered, and be engaged in creative processes.

Second, the correlation between team climate for creativity and team climate for

excellence was too high ( $r = .82$ ), raising a possible discriminant validity problem. However, the correlation is below the cutoff criterion for discriminant validity (Brown, 2006), and the results of CFA in this study suggest that the model that distinguished between team climate for creativity and team climate for excellence provided a significantly better model fit than the model that combined the two constructs. Therefore, discriminant validity is not a serious problem in this study.

Third, because data were collected from a single organization, it is worth noting that employee's behaviors are embedded within the organizational context (Ilgen, 1995); as such, the results of this research may be due to the specific characteristics of the organization that was studied. Therefore, in order to generalize the findings of this study, future studies are needed to replicate this research in other organizational settings. For example, the following question is worthy of consideration: Will the non-significant moderating effects of the team leader's behavior and team climate for excellence on the mediating relationships found in this study be the same in a high-tech organization? In addition, the level of task interdependence differs between sales representatives and R&D professionals. While task interdependence is relatively low for sales representatives, task interdependence is relatively high for R&D professionals. Another question to consider is as follows: What is the frequency of interactions with team leaders and coworkers? While employees in the sales teams do not frequently interact with their team leaders and coworkers, employees in the product development teams do interact with their team leaders and coworkers more frequently. Thus, would the impact of team context factors on the employee's behavior be different between these two teams?

Fourth, this study considers ECP as an overall construct because there is no theoretical reason to differentiate the effect of psychological empowerment on each component of ECP.

However, examining differential relationships between each component of ECP and individual outcomes would be a fruitful avenue for future research. For example, will each component of ECP affect individual outcomes (e.g., individual creativity and job performance) in same way? If not, which components of ECP positively or negatively lead to individual outcomes? Moreover, which component of ECP is the most important with respect to individual outcomes? While this was not the focus in the current study, examining differential relationships between various antecedents and each component of ECP is another important future research direction.

### **Conclusion**

As organizations today operate in increasingly competitive and dynamic environments, psychological empowerment has attracted considerable attention from both researchers and practitioners. Given this, there is a need to better understand the effects of psychological empowerment on individual effectiveness including creativity and job performance. This study provides an important contribution to the psychological empowerment and creativity literatures by exploring the “black box” of psychological empowerment - how and when psychological empowerment influences individual creativity and individual job performance. The results highlight that engagement in creative processes is an important mechanism through which psychological empowerment promote individual creativity and individual job performance. Moreover, the results of this study further suggests that team climate for creativity helps individuals who are not highly engaged in creative processes to produce more creative outcomes. Future research should examine whether the findings in my study hold in longitudinal studies and across industries. In summary, my dissertation answers some key questions in both the psychological empowerment and creativity domains, and provides insight for future research to further examine these relationships.

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## APPENDIX A: ITEMS FOR SURVEY MEASURES

Unless otherwise specified, all the variables are measured using a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

### *Psychological Empowerment* (From Spreitzer, 1995)

#### *Meaning items:*

1. The work I do is very important to me.
2. My job activities are personally meaningful to me.
3. The work I do is meaningful to me.

#### *Competence items:*

4. I am confident about my ability to do my job.
5. I am self-assured about my capabilities to perform my work activities.
6. I have mastered the skills necessary for my job.

#### *Self-determination items:*

7. I have significant autonomy in determining how I do my job.
8. I can decide on my own how to go about doing my work.
9. I have considerable opportunity for independence and freedom in how I do my job.

#### *Impact items:*

10. My impact on what happens in my department is large.
11. I have a great deal of control over what happens in my department.
12. I have significant influence over what happens in my department.

*Engagement in Creative Processes* (From Zhang & Bartol, 2010; Binnewies, Ohly, & Sonntag, 2007)

Employees answered the following question: “To what extent do you engage in the following actions when in performing your sales activities?”

*Problem identification items:*

1. I spend considerable time trying to understand the nature of the problem.
2. I think about the problem from multiple perspectives.
3. I decompose a difficult problem/assignment into parts to obtain greater understanding.

*Information searching and encoding items:*

4. I consult a wide variety of information.
5. I search for information from multiple sources (e.g., personal memories, others’ experience, documentation, Internet, etc.).
6. I retain large amounts of detailed information in my area of expertise for future use.

*Idea generation items:*

7. I consider diverse sources of information in generating new ideas.
8. I look for connections with solutions used in seemingly diverse areas.
9. I generate a significant number of alternatives to the same problem before I choose the final solution.
10. I try to devise potential solutions that move away from established ways of doing things.
11. I spend considerable time shifting through information that helps to generate new ideas.

*Idea evaluation items:*

12. I think about all advantages and disadvantages of each alternative to approach the task.
13. I intensively deliberate about which option would be the best to implement my idea.

14. I balance different options of how to approach the task differently and ultimately decided in favour of one.

***Team Leader's Supportive Behavior*** (From Oldham & Cumming, 1996)

1. My team leader helps me solve work-related problems.
2. My team leader encourages me to develop new skills.
3. My team leader keeps informed about how employees think and feel about things.
4. My team leader encourages employees to participate in important decisions.
5. My team leader praises good work.
6. My team leader encourages employees to speak up when they disagree with a decision.
7. My team leader refuses to explain his or her actions (reversed-coded).
8. My team leader rewards me for good performance.

***Team Climate for Creativity/Excellence*** (From Anderson & West, 1998; Gong, Kim, Lee, & Zhu, 2013)

*Team climate for creativity items:*

1. This team is always moving toward the development of new answers.
2. Assistance in developing new ideas is readily available.
3. This team is open and responsive to change.
4. People in this team are always searching for fresh, new ways of looking at problems.
5. In this team we take the time needed to develop new ideas.
6. People in the team cooperate in order to help develop and apply new ideas.
7. Members of the team provide and share resources to help in the application of new ideas.

8. Team members provide practical support for new ideas and their application.

*Team climate for excellence items:*

9. Do your team colleagues provide useful ideas and practical help to enable you to do the job to the best of your ability?
10. Do you and your colleagues monitor each other so as to maintain a higher standard of work?
11. Are team members prepared to question the basis of what the team is doing?
12. Does the team critically appraise potential weakness in what it is doing in order to achieve the best possible outcome?
13. Do members of the team build on each other's ideas in order to achieve the best possible outcome?
14. Is there a real concern among team members that the team should achieve the highest standards of performance?
15. Does the team have clear criteria which members try to meet in order to achieve excellence as a team?

***Individual Creativity*** (Revised From Oldham & Cummings, 1996)

Team leaders were asked to evaluate their subordinate's creative performance by answering the following question:

1. How ORIGINAL is this employee's work? Original work refers to developing ideas, methods, and portfolios that are totally unique and new to customers/organizations.

2. How ADAPTIVE and PRACTICAL is this employee's work? Adaptive and practical work refers to using existing information or materials to develop ideas, methods, or portfolios that are useful to the customers/organizations.
3. How CREATIVE is this employee's work? Creativity refers to the extent to which the employee develops ideas, methods, or portfolio that are both original and useful to the customers/organizations.

***Individual Sales Performance (Archival data)***

1. Monthly absolute sales volume (in Korean Won)
2. The number of new contracts per month

***Intrinsic Motivation*** (From Grant, 2008)

“Why are you motivated to do your work?”

1. Because I enjoy the work itself.
2. Because it's fun.
3. Because I find the work engaging.
4. Because I enjoy it.