Employee creativity: the role of team climate, challenge stress and psychological capital

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Employee Creativity: the Role of Team Climate, Challenge Stress and Psychological Capital

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Department of Applied Social Sciences
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by

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Abstract

This study aimed at examining two contextual factors, team climate and challenge stress, and personal psychological resources in prediction of employee creativity among Hong Kong Chinese employees, seeking support for the interactionist model on the relationship between team climate and employee creativity; and between challenge stress and employee creativity through the mediation of psychological capital (PsyCap).

The sample consisted of 113 adults, recruited mainly from six local Hong Kong companies. Results suggested that team climate did not positively predict employee creativity and accordingly there is no mediating effect of PsyCap on the relationship between team climate and employee creativity. On the other hand, results showed that challenge stress positively predicted employee creativity and this positive relationship was partially mediated by PsyCap. A supplemental regression analysis showed that intrinsic motivation significantly predicted PsyCap over and above team climate after having demographic and control variables, namely creative personality and job complexity controlled for. Explanations for the findings are discussed to shed light on limitations of the present study. Practical implications for human resources development and future research directions in the arena of psychological capital development are discussed.
Acknowledgements

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Chapter 1: Introduction and Literature Review

According to the Global Competitiveness Report, 2014-2015 published by World Economic Forum, Hong Kong was ranked 7th in the Global Competitiveness Index (GCI), with a score 5.46 out of a maximum of 7, while Singapore, another one of four Asian dragons with a similar competitive edge as Hong Kong, maintained its ranking at 2nd in the last four consecutive years, with a score of 5.65. In addition, in one of 12 pillars in GCI, innovation, Hong Kong was 26th out of 144, prominently showing a lag behind Singapore which secured the place of 9th (World Economic Forum, 2015). The innovation pillar consists of components of technological innovation as well as non-technological innovations. The latter are closely related to knowledge, expertise, skills and working conditions that are embedded in organizations (World Economic Forum, 2015).

This information arouses the researcher’s interest to peer into employee creativity, the impetus of organizational innovation, as literature has shown that the ability to be creative in the workforce is the driving force and survival edge for a society (Porter, 1990). Also, an economy with stable growth facilitated by this driving force and survival edge is not only beneficial to individual’s materialistic life, but also to one’s psychological make-up (Diener, Ng, Harter, & Arora, 2010).
Globalization, rapid technological change, and economic uncertainty make creativity, the cornerstone of innovation (Klijn & Tomic, 2010), a crucial organizational performance variable and a path to organizational survival (as cited in Shalley, & Gilson, 2004). Evidence has shown that creative performance contributes to organizational innovation, effectiveness and survival by helping organizations increase their abilities to solve problems, create new products and services, adapt to changing customer needs and benefit from opportunities (Amabile and Conti, 1999; Zhang, & Bartol, 2010). By identifying factors both inherent in individual differences and organizations for fostering employees’ creativity, organizations can innovate competitively and enhance their effectiveness overall (Amabile, 1997, Zhou, & Ren, 2012).

In the present study, the researcher aimed at examining two contextual factors, team climate and challenge stress, together with positive psychological capacities and resources, in predicting employee creativity. With such examinations, support is sought for the interactionist model on the relationship between team climate and employee creativity and between challenge stress and employee creativity through the mediation of psychological capital (PsyCap). To this end, literature on employee creativity was first reviewed. Next, hypotheses on these two contextual factors were developed with substantive evidence from literature, along with the role of PsyCap in potentially fostering employee creativity.
1.1. Literature Review

Creativity in the working setting is the production of novel and useful ideas or solutions concerning products, services, processes, and procedures (Amabile, 1996; Oldham & Cummings, 1996; Rego, Sousa, Marques, & e Cunha, 2012). The process of idea generation or problem solving and the actual idea or problem are implied in this definition (Amabile, 1996; Sternberg, 1988, Weisberg, 1988). Both processes can be either initiated by an individual or a small group of people working together (Amabile, 1996). Another term that always goes together hand in hand with creativity, like twin sisters in organizational research is innovation. Though these two terms conceptually overlap, Anderson, De Dreu, and Nijstad, (2004) used “intentional introduction and application” and “intentional benefit” (West, & Farr, 1990) that applies to innovation to differentiate innovation from creativity. However, if idea generation without “intentional introduction and application” that follows, such idea generation may just be merely mumbling around. If idea implementation occurs without novel and useful ideas, what actions would implementation be for? In fact, “intentional benefit” is already implied in creativity’s definition: novel and useful ideas or solutions. In that sense, creativity delivers benefits to products, services, processes or procedures that it is applied to. Therefore, the distinctions between creativity and innovation only lie on the emphases they place. Creativity focuses on the production of new and useful ideas by individuals or a group of people, whereas innovation stresses the implementation of new
ideas or practices in a unit or throughout an organization (Zhou, & Shalley, 2011). In
essence, creativity is the cornerstone of innovation: to achieve organizational
innovation, employee creativity is the first step. Organizations can effectively promote
employee creativity to achieve innovational goals. By fully leveraging employees’
capabilities in creativity, organizations can be innovative in the market place, possessing
greater competitive advantage (Zhou, & Ren, 2012). As such, in the present study,
creativity is linked with innovation and vice versa.

1.2. Theory and Hypotheses Development

Creativity has long been viewed as individual cognitive processes occurring within
the person (West, & Farr, 1990). However, creativity does not take place in a vacuum.
Individuals with distinctive personality characteristics and/or specific cognitive abilities
for creativity may not elicit creative outcomes. It is the context that shapes one’s
cognitive process. Therefore, context plays a vital role in fostering or hindering
creativity. Given the nourishing approach of social psychology in studying creativity,
several theories has been regarded as theoretical advancements in linking the micro,
meso and macro levels in explaining creativity. Two of these theories serve as
theoretical frameworks in the present study. The first one is Amabile’s (1996)
componental model of creativity and the second one is the interactionist perspective of
organizational creativity (Woodman, & Schoenfeldt, 1989, Woodman, Sawyer, &
Griffin 1993).
The componential model of creativity identifies three intra-individual factors that are relevant in creative processes, domain relevant skills, creativity relevant processes, intrinsic task motivation, and an external factor, the social environment in which an individual operates (Amabile 1996). Supported by additional research, work environment quality did affect the level of creativity and innovation in groups and organizations (Mathisen & Einarsen, 2004).

The interactionist perspective of organizational creativity postulates that creativity is affected by the ways in which the personal and organizational factors interact. Similar to Amabile’s (1996) componential model, the interactionist perspective is based on the idea that creativity is a phenomenon on the individual level that is also affected by social and contextual influences. It stresses that it is the interaction of an individual’s factors, such as personality, know-how, intrinsic motivation, cognitive styles and abilities, together with social and contextual factors in the work environment that fully predicts creative performance. The interaction can take place at the individual, team, and organizational level (Woodman et al., 1993).

A variety of contextual variables have been identified that may influence creativity and innovation, such as authentic leadership (Rego, Sousa, Marques, & e Cunha, 2014), empowering leadership (Zhang & Bartol, 2010), leader–member exchange (LMX) (Joo, Yang, & McLean, 2014) and perceived organizational support (Diliello, Houghton, & Dawley, 2011). Among these contextual variables, the importance of the values and
norms of behavior that the organizational climate engenders has also been stressed by a number of scholars (e.g., Amabile, Conti, Coon, Lazenby, & Herron, 1996; Anderson & West, 1998; Baer & Frese, 2003; Somech, & Drach-Zahavy, 2013; West, 2002).

Climate is generally defined by two approaches. They are the cognitive schema approach and the shared perception approach. The former conceives climate as an individual perception and cognitive representation of the work environment. The latter defines climate as shared perceptions of organizational policies, practices, and procedures (Schneider, 1990). Based on the interactionist model, it is reasonable to expect that this is where interpersonal intellectual exchange around challenging tasks takes place and where the employees actually experience and perceive the climate that matters in explaining employee creativity. Accordingly, it seems appropriate to measure climate at the team level. To support this claim, research has shown that team climate is significantly related to creative accomplishment across contexts and criteria (Hunter, Bedell, Mumford, 2007). As such, in the context of team processes, climate is defined as shared perceptions by the work group or the way of working together that the team has developed (Anderson & West, 1998). In a nutshell, team climate examines employees’ perceptions of, or experiences in, their proximal work environment with respect to different dimensions that are favorable to creativity and innovation, such as support, autonomy, participative safety etc. (Hunter et al., 2007).
Assessing team climate is focused mainly around four psychological concepts, *clarity of objectives in team, participative safety, task orientation* and *support for innovation*. They are posited as the requirements for effective interactions among teams of people working together to achieve both creativity and innovation (Anderson & West, 1996). If team members’ views of the attainability and values of team objectives are assured, more effort will be channeled to meet those objectives. If team members are feeling safe in giving input to the team, they will participate without fear of being criticized or ridiculed. If task orientation demands monitoring quality and critical reflection which drive improvements in work and support for innovation, related to both articulated and enacted support in team processes, more creativity and innovative behavior would be generated (Anderson & West, 1996). Recent research has also revealed that some team process variables, such as support for innovation, visionary objectives, task orientation and external communication, manifested the strongest relationships with creativity and innovation (Hülsheger, Anderson, & Salgado, 2009). Also participative safety, one of the team process variables, has been shown to be positively linked to creativity (De Dreu & West, 2001).

**Hypothesis 1:** Team climate positively predicts employee creativity.

Implied from Amabile’s (1996) componential model of creativity, intraindividual factors have been playing a key role in predicting creativity. Individual predictors of creativity such as affect and personality have been well researched (Amabile, 1996;
In addition, personal agentic psychological resources such as intrinsic motivation were also identified as instrumental in achieving creative outcomes (Amabile, 1996; Tierney & Farmer, 2002). Some motivation literature suggests that positive agentic processes underline the relationship between psychological resources and creative performance (Ambrose & Kulik, 1999).

Psychological Capital (PsyCap), an emerging psychological resources, refers to a higher order core construct derived from a constellation of motivational and behavioral tendencies associated with self-efficacy, optimism, hope and resilience (Luthans, Avolio, & Avery, 2007). With a sense of self-efficacy, employees have “convictions about their abilities to mobilize motivation, cognitive resources, and courses of action that are needed to successfully execute a specific task” in a creative endeavor (Stajkovic & Luthans, 1998, p.66). Armed with hope, employees may have goal-directed energy (agency) and can plan to pursue any goals (pathways) in the process of being creative and innovative (Snyder, Irving, and Anderson, 1991). Optimists manifest an attribution style of attributing positive events to personal and permanent characteristics, while attributing negative events to external temporary factors of the situation (Seligman, 1990) and expect good things to happen in the future and therefore actively strive to achieve their goals through self-regulatory mechanisms (Scheier & Carver, 1985). With this optimistic sense, employees would be proactive in embarking on creative pursuits and carry out innovation that is necessary in the workplace. Having psychological
capacity to “bounce back from adversity, uncertainty, conflict, failure, or even positive change, progress and increased responsibility” (Luthans, 2002, p.702), employees tend to be able to move on from significant setbacks and adapt positively to changes required from work (Masten & Reed, 2002). This kind of capacity is crucial, especially for creative and innovative works in which encountering conflicts, setbacks or failures seem inevitable.

All these personal psychological capacities and resources are conducive to employee creativity as it is commonly regarded that employee creativity is a high-risk activity, especially in the organizational context. In the process of generation of novel and useful ideas and subsequent application, employees may experience many setbacks or failures before meeting few successes. Therefore, those with self-efficacy, hope, optimism and resilience would be more likely to undertake risky and challenging activities inherent in the creative and innovative process.

**Hypothesis 2**: Psychological capital positively predicts employee creativity.

While it is expected that team climate as a contextual factor and PsyCap as an intra-individual factor positively predict employee creativity, it is reasonable to expect that team climate positively predicts PsyCap. Team climate positively predicts PsyCap through sense making perspective (Weick, 1995). Sense making perspective suggests that contextual factors such as organizational climate and managers’ leadership style might help foster the potential positive effects that contextual cues generated by team
climate on PsyCap. These contextual cues help employees to understand there are attainable and valued goals, safe participation, demand for reflection and improvement in work and support available for creativity and innovation. With these positive cues embedded in the work environment, individual employees may translate these cues to boost their psychological capacities and resources to work on challenges that they may encounter in the process of engaging creativity or innovation.

**Hypothesis 3**: Team climate positively predicts psychological capital.

With predictions from team climate to PsyCap and from PsyCap to employee creativity, PsyCap would be expected to play a mediating role on the relationship between team climate and employee creativity. The mediating role of PsyCap has been demonstrated in samples of Chinese on some negative and positive criterion variables such as between occupational stress and depressive symptoms among university teachers in China (Shen, et al., 2014), and between perceived supervisor support and job performance in a sample of life insurance industry workers in Taiwan (Liu, 2013). To the researcher’s best knowledge, PsyCap’s mediation role on the relationship between team climate and employee creativity has not been explored before.

**Hypothesis 4**: PsyCap will mediate the relationship between team climate and employee creativity.

Another contextual variable that will be explored in the present study is work stress. Work stress appears to be an inevitable part of the work environment and has
been shown to affect employee creativity (Hon, Chan, & Lu, 2013). According to the transactional model of stress and coping (Lazarus & Folkman, 1984), work stressors—stimuli that place demands on individuals that are appraised as hindrances include role ambiguity, role conflict, hassles, red tape, etc. or challenges such as work overload, time pressures, and high levels of responsibility (as cited in Cavanaugh, Boswell, Roehling, & Boudreau, 2000). People appraise stressful situations as either potentially threatening or potentially promoting mastery, personal growth or future gains. This initial appraisal process influences one’s subsequent emotions and cognitions, which in turn influences how this person reacts to stressors (Lazarus & Folkman, 1984).

When challenge stressors are appraised as having the potential to promote personal growth or gain, triggering positive emotions, eustress, a kind of stress that creates a feeling of fulfillment or achievement, is produced (Selye, 1978). Conversely, hindrance stressors may be appraised as having the potential to harm personal growth or gain triggering negative emotions, resulting in distress, another kind of stress that creates a feeling of frustration, tension and anxiety (Selye, 1978). Accordingly, an active or problem-solving style of coping, for example increasing effort, would be generated by challenge stressors. Conversely, a passive or emotional style of coping, for example withdrawal or rationalization, would be generated by hindrance stressors (Pearsall, Ellis, & Stein, 2009). The view that stress associating with some stressors may result in negative outcomes, while other stressors may produce positive outcomes has been
further confirmed in later research (e.g. Lepine, Podsakoff, & Lepine, 2005; Podsakoff, LePine, & LePine, 2007). This research also helped to confirm that the distinction between eustress and distress should be based on the type of demand, i.e. the type of stressors, not on the level of demand (Selye, 1978).

Challenge stress such as work overload, time pressure and high levels of responsibility may help enhance employees’ positive feelings toward their work and organization, stimulating them to strive for excellence in work (Hon & Kim, 2007; Lepine et al., 2005). This type of work stressor provides impetus for employees to change and create novel ideas and procedures to solve problems encountered in work. Then how can challenge stress be channeled to creativity? According to voice theory, when experiencing work-related challenge stress, employees may actively try to improve stressful conditions and create ideas for improvement, rather than respond in other ways such as quitting the job (exit), staying with the job and accepting what it is (loyalty), and staying with the job but ignoring the situation (neglect) (Withey & Cooper, 1989). As such, challenge stress may be channeled into creativity in the form of voice behaviors, expressing change-oriented ideas and suggestions (Withey & Cooper, 1989). An expression of voice has proved to lead to creativity in one study of job dissatisfaction (Zhou & George, 2001).

**Hypothesis 5**: Challenge stress positively predicts employee creativity.
Challenge stress can also be regarded as a specific kind of job characteristic. According to Daniels’ (2006) multilevel model, job characteristics exist at three levels: latent, perceived, and enacted. Latent (formal requirements, entitlements and facilities of the job) and perceived (employees’ assessments of typical levels of the job) characteristics affect one’s perceptions on job, in turn determining the scope of thoughts, words, and decisions to be enacted on any given working day in response to the events experienced on the day. Therefore, it is the enacted job characteristics that shape employees’ experiences from day to day in the workplace, driving felt emotions and leading over time to the development of either positive or negative affective states and work attitudes, such as vigor, dedication, satisfaction or exhaustion and/or disengagement respectively (as cited in Boyd & Tuckey, 2014). When an employee acknowledges job demand, and begins responding to it, the enactment of a demand-response starts. The response is according to the employee’s appraisals of specific demanding stimuli in the work environment. As aforementioned, job demands are regarded as challenges when they are perceived to offer learning and growth opportunities. Challenge stress, which is characterized by work overload, increased responsibility, time pressure and tight schedule, would be appraised by employees as challenges when those individuals have confidence or vigor to summon constructive personal resources to entail such positive appraisals. In addition, in the Job Demands-Resources model (JD-R, Demerouti, Bakker, Nachreiner, & Schaufeli, 2001),
motivational pathway, in contrast to health impairment pathway, would be triggered when job resources, in terms of psychological ones, are available to help stimulate personal growth, learning and development, both intrinsically, such as by meeting basic psychological needs (e.g. autonomy, relatedness, and competence) and extrinsically, such as by enabling the completion of work goals. Accordingly, an upward spiral effect on individual capacities and resources would be expected.

**Hypothesis 6:** Challenge stress positively predicts psychological capital

Similar to the logic from the first model, with predictions from challenge stress to PsyCap and from PsyCap to employee creativity, PsyCap would be expected to play a mediating role on the relationship between challenge stress and employee creativity. Again, to the researcher’s best knowledge, research on the mediating role of PsyCap on the relationship between challenge stress and employee creativity has not been done previously.

**Hypothesis 7:** Psychological capital will mediate the relationship between challenge stress and employee creativity.
1.3. Conceptual Model

A proposed conceptual model with hypotheses is presented in figure 1. Hypotheses 1, 2, 3, 4 and hypotheses 5, 2, 6, 7 represented two mediation models.

*Figure 1. Graphic Illustration of Proposed Mediation Models*

Hypothesis 1: Team climate positively predicts employee creativity.

Hypothesis 2: PsyCap positively predicts employee creativity.

Hypothesis 3: Team climate positively predicts employee creativity.

Hypothesis 4: PsyCap will mediate the relationship between team climate and employee creativity.

Hypothesis 5: Challenge stress positively predicts employee creativity.

Hypothesis 6: PsyCap positively predicts employee creativity.

Hypothesis 7: PsyCap will mediate the relationship between challenge stress and employee creativity.
Chapter 2: Methodology

2.1. Participants

The study consisted of 113 employees. 84.96% were mainly recruited from 6 companies, with the numbers of participants ranging from 6 to 39 from each company. The rest were recruited by means of convenience sampling with same criteria as those recruited at companies, that being individuals working full time and in private sectors. Among the total participants, 45.1% were female, 54.9% were male. This gender ratio was comparable to the labour population in Hong Kong, in which 48.77% are female, and 51.23% male (Hong Kong Census and Statistics Department, 2014).

In terms of age, 28.3% were below or equal to 30 years old, 34.5% were between 31 to 40 years old, 28.3% were between 41 to 50 years old, and 8.9% were older than 50 years of age.

In terms of education, 30% of participants had upper secondary education or below, i.e. Secondary 7 and 46.9% of the sample had university degree or above, (See Appendix A for full details of sample’s profile).

2.2. Research Procedures

The recruitment of participants started in mid-October, 2014. Invitations to participate were sent to companies that the researcher has connection with. After receiving initial agreement to participate in the study, consent form with details of the study, together with the measures, were sent to the coordinating persons of recruited
companies for their final approval. Comments and feedback from the first few companies were entertained to make minor adjustments in both procedure and format before finalizing the measures. Participants either filled in the measure in hard copies or on lines. To ensure confidentiality, those who filled in hard copies were asked to return them in envelopes provided by the researcher. Online responses could only be read by the researcher. Given the low participation rate among the companies recruited, the researcher had to expand recruiting participants from other sources, such as working adults. Data collection was completed by the end of January, 2015.

2.3. Measures

Back-translation method (Brislin, 1970) was used to translate the measures into Chinese with the help of two bilingual professionals. The researcher did the final proofread to assure semantic equivalence. The measures were presented in a bilingual format. Both Chinese and English were printed side by side to meet the comprehension needs of participants.

*Employee Creativity*

Employee creativity was measured with Zhou and George’s (2001) 13-item scale, in which three items were adopted from Scott and Bruce (1994). The scale uses a 5-point Likert scale ranging from 1 (not at all characteristic) to 5 (very characteristic). The total scores were averaged. Sample items were “The employee suggests new ways to achieve goals or objectives” and “The employee comes up with new and practical ideas
to improve performance”. Cronbach’s alpha was .95.

**Team Climate**

Kivimäki, & Eloainio’s (1999) short form Team Climate Inventory (TCI) was used to measure climate in the team. TCI is a 14-item scale based on Anderson, & West’s (1998) four factor model of work group innovation, including factors for vision, participative safety, task orientation and support for innovation. Different response alternatives were found to be used in the TCI’s subscales, as indicated by literature review, so adjustment to the response alternatives was necessary in order to improve the measure (Mathisen & Einarsen, 2004). In this study, 4 items for subscale of vision were recast to use a 5-point Likert scale ranging from 1 (not at all) to 5 (completely), instead of the original 7-point Likert scale. For other subscales’ items, a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used. All items were summed and averaged to obtain a scale mean for analysis. Sample items include: “How far are you in agreement with objectives of your teams?” (Vision), “We have a ‘we are in it together’ attitude” (Participative Safety), “Team members are prepared to question the basis of what team is doing” (Task Orientation), “People in this team are always searching for fresh, new ways of looking at problems”(Support for Innovation).

Cronbach’s alpha for subscales of team vision, participative safety, task orientation and support for innovation subscales were .85, .90, .82 and .87 respectively.
Work Stress

Employee’s work stress was measured using Cavanaugh et al.’s (2000) 6-item scale of challenge-related stress and 5-item scale of hindrance-related stress. A five-point Likert scale (1 = strongly disagree to 5 = strongly agree) is used for this measure. Sample items of Challenge stress include “Many projects and assignments” and “Experience time pressures on the job”. Hindrance stress’ sample items include “Don’t clearly understand what is expected on the job” and “Experience low levels of job security”. Cronbach’s alpha for Challenge stress was .89 and for Hindrance stress .40.

Psychological Capital

Employee’s psychological capital (PsyCap), consisting of self-efficacy, hope, resiliency and optimism, was measured using the psychological capital questionnaire (PCQ) (Luthans, Avolio, & Youssef, 2007). PCQ contains six items for each of these four components. PsyCap has been validated by confirmatory factor analysis and confirmed as a second order factor which means that each item loads on its respective component and each of the four components is fitted to the overall latent PsyCap factor (Luthans et al., 2007). Participants were asked to rate the extent to which each item applied to them right now and rate their agreements on a 6-point Likert scale, 1 (strongly disagree) to 6 (strongly agree). The total scores of 24 items were averaged. Sample items include: “I feel confident analyzing a long-term problem to find a solution” (self-efficacy); “If I should find myself in a jam at work, I could think of
many ways to get out of it” (hope); When I have a setback at work, I have trouble recovering from it, moving on” (resilience); “When things are uncertain for me at work, I usually expect the best” (optimism). Cronbach’s alpha for the self-efficacy, hope, resiliency and optimism subscales in this study were .91, .86, .67 and .58 respectively.

Demographics

Prior research had suggested that certain demographic differences have potential influences on employee creative behavior (e.g. Tierney & Farmer, 2011; Zhang, & Bartol, 2010), such as gender, age and education. As certain job types offer employees more opportunities to exhibit creativity (Oldham & Cummings, 1996), job types were also controlled for in the present study.

Control Variables

Three scales used as control variables in the present study were scored on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Creative Personality

Certain personality characteristics were believed to be correlated with creativity. Creative personality was measured with the Creative Personality Scale (Gough, 1979). It has been widely used and is a well-respected measure (Oldham & Cummings, 1996). The scale has 18 adjectives that describe creative and 12 adjectives that describe less creative people. The participants were asked to what extent they agree with the
adjectives describing their personalities. To calculate the scores, all adjectives that describe less creative people were reverse scored. Cronbach’s alpha was .72.

**Intrinsic motivation**

Intrinsic motivation was measured using three items adopted from Warr, Cook, and Wall’s (1979) scale. Items include “I feel a sense of personal satisfaction when I do my job well”, “I take pride in doing my job as well as I can” and “I feel unhappy when my work is not up to my usual standard”. There were no reverse items in the scale. Cronbach’s alpha was .70.

**Job complexity**

Job complexity was assessed with the 4-item job complexity subscale of the Work Design Questionnaire (WDQ) (Morgeson, & Humphrey, 2006). The WDQ, which helps distinguish job complexities from other factors in job characteristics, is a more up to date measure of job characteristics than the Job Diagnostic Survey (JDS; Hackman & Oldham, 1980). Sample items were: “The job requires that I only do one task or activity at a time” (reverse scored) and “The tasks on the job are simple and uncomplicated” (reverse scored). Cronbach’s alpha was .86.

**Associative cognitive style**

Associative cognitive style was measured with three items from Jabri’s (1991) index. These items have shown to provide a reliable self-rating of a preference for a systematic, methodical and consistent approach to problem solving, and therefore, are
negatively related to creativity (Jabri, 1991; Scott & Bruce, 1994). Participants were asked the extent of their agreement with the statements. Sample items were “I am consistent in the way I tackle problems” and “I pay attention to the order of the steps needed to finish a job”. Cronbach’s alpha was .44.

2.4. Statistical Procedures

Statistical analyses were performed using IBM SPSS version 22. Before the analysis, the assumptions of linearity, normally distributed errors, and uncorrelated errors were checked and met. Descriptive statistics were first performed and correlation analysis was then conducted. Hierarchical regression was performed to determine associations between employee creativity and PsyCap. Hypothesis 1, 2, 3, 4 and 5, 2, 6, 7 were tested by two mediation models in accordance with Baron and Kenny’s (1996) four conditions and the indirect effect determined with SPSS Macro, named PROCESS, developed by Andrew F. Hayes (as cited in Leech, Barrett, & Morgan, 2015).
Chapter 3: Results

3.1. Descriptive Statistics

Table 1 summarizes means, standard deviations, correlations and reliabilities of study variables. All demographic variables, except age ($r = .16, p > .05$) and service tenure ($r = .08, p > .05$), were correlated significantly with employee creativity (EC), implying that age and service tenure did not have significant relationship with EC. Among significant correlations, position has the highest correlation with EC ($r = .56, p < .01$); and it was significantly associated with education ($r = .61, p < .01$). Given such close association, in order to avoid duplicate variance explained by these variables, i.e. multicollinearity, only education was entered in regression analysis. It is worth noting that gender (0=female, 1=male) had a higher correlations with EC ($r = .49, p < .01$), which suggests that males demonstrated stronger association with EC than females. Also, gender had significant relationships with education, position and personal monthly income, further implying that males enjoy higher educational attainment, position, and personal income than their female counterparts. Job type was significantly positively correlated with EC ($r = .34, p < .01$), suggesting that jobs demanding more creativity, such as strategic marketing and research & development in this study, associated significantly with EC. Based on Table 1, four demographic variables, i.e. gender, education, job type and age were included as demographics controls in subsequent regression analysis on EC.
As expected, correlations between employee creativity, challenge stress and PsyCap were all positive. However, team climate was positively related to PsyCap ($r = .23, p < .05$), but not positively correlated with employee creativity ($r = .19, p > .05$). Control variables, namely intrinsic motivation, creative personality and job complexity had significant correlations with employee creativity, challenge stress, PsyCap and team climate. Accordingly, these control variables earned their roles in subsequent regression and mediation analysis on EC.
Table 1
Descriptive Statistics, Correlations, and Reliabilities of Study Variables (N = 113)

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Note. *p < .05, **p < .01. EC = Employee Creativity, PsyCap = Psychological Capital.
As there is a high and significant correlation \((r = .64, p < .01)\) between EC and PsyCap which may suggest multicollinearity, the potential existence of multicollinearity may have reduced the predictive power of the mediation model, so this possibility was explored. In order to ascertain whether these two constructs are different, factor analysis was conducted. In table 2, factor loadings showed that all items of employee creativity heavily loaded on a single factor. PsyCap showed 4 factor structure and only 2 items slightly cross over EC’s single factor. This factor loading procedure can help ascertain the discriminate validity of these two constructs and ease the concern of multicollinearity.
Table 2
*Factor Loadings for Employee Creativity and PsyCap by Varimax Rotation*

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*Note.* Factor loadings smaller than 0.35 were suppressed.
3.2. Mediation Analysis - PsyCap on Team Climate and Employee creativity

Hypothesis 1, 2, 3, 4 were tested in a mediation model as shown in figure 1.

According to hypothesis 1, team climate positively predicts employee creativity. Though it was found that team climate had no significant relationship with EC ($r = .19, p > .05$), team climate’s effect on EC could not be dismissed without further investigation. To test this mediation model, a SPSS macro, named PROCESS was used. Team climate was not significantly associated with employee creativity ($\beta = .08, SE = .09, t = .93, p = .26$), thus, hypothesis 1 was not supported. PsyCap was significantly associated with employee creativity ($\beta = .50, SE = .10, t = 5.02, p < .001$), hence, hypothesis 2 was supported. Team climate was also not significantly associated with PsyCap ($\beta = .13, SE = .07, t = 1.73, p = .08$), and as such, hypothesis 3 was rejected. Given that the total effect between team climate and employee creativity was not found, together with the indirect effect of team climate and employee creativity through PsyCap with 95% confidence interval including zero ($\beta = .06, SE = .04; 95\% CI [-.00, .17]$), this mediation model could not be established and hence hypothesis 4 was not supported.
3.3. Regression Analysis on Employee Creativity

With confirmation of significant correlation between PsyCap, challenge stress and EC, hierarchical regression analysis was then used to investigate how PsyCap predicted EC above and beyond all demographic and control variables (see Table 3). First, demographic variables were entered in step 1 to serve as controls. The second step included all control variables: intrinsic motivation, creative personality and job complexity with the exclusion of associative cognitive style which showed low internal reliability ($\alpha = .44$). In the third step, challenge stress was entered using simultaneous regression to identify unique explained variance beyond all demographic and control variables. In step 4, PsyCap was entered to identify unique explained variance above and...
beyond challenge stress. Tolerance value (< 1 - $R^2$) is used to check collinearity to
determine whether problems with multicollinearity existed among all study variables. All
the models generated had been checked for tolerance value to assure that they were not
over (1 - $R^2$). The demographic variables did account for a significant amount of
explained variance in step 1, significantly predicting EC, $R^2$ change = .35, $F (4, 108) =
14.89, p < .001$, indicating that 35% of the variance in EC was predicted from the four
demographic variables, namely gender, age, education and job type. When the control
variables were entered in step 2, the model significantly improved the prediction of EC,
$R^2$ change = .16, $F (3, 105) = 12.31, p < .001$, indicating that control variables added
16% of the variance in EC. In step 3, challenge stress further added 6% of explained
variance in EC, making the model explain 58% of the variance in EC. In step 4, when
PsyCap was entered, a further 5% of the variance was explained by adding beta = .30,
$p < .001$ to the equation and simultaneously drawing down challenge stress’ beta
from .30 to .18, $p < .01$. Gender remained significant throughout the four steps, implying
that males are more predictive of EC than females. Also, creative personality was
significant in all three steps confirming its prominent role in predicting EC. According to
Baron and Kenny (1986), if all steps demonstrate significant contribution to the outcome,
it could be inferred that PsyCap did not fully mediate but only partially mediated the
relationship between challenge stress and EC. This result implied that PsyCap may serve
as a mediator in reducing the magnitude of the relationship between challenge stress and
EC.

Table 3

*Hierarchical Regression Model of Predictors on Employee Creativity*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Step 1 $\beta$</th>
<th>Step 2 $\beta$</th>
<th>Step 3 $\beta$</th>
<th>Step 4 $\beta$</th>
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</table>

$R^2$ change  | .35            | .16            | .06            | .05            |

$df$  | 4/108          | 3/105          | 1/104          | 1/103          |

$F$ change  | 14.89***       | 12.31***       | 16.33***       | 15.27***       |

*Note. N = 113. *p < .05, **p < .01, ***p < .001. $\beta$ = standardized coefficient.*

3.4. Mediation Analysis – PsyCap on Challenge Stress and Employee Creativity

Statistical mediation analysis was further conducted to ascertain the possible mediation effect of PsyCap on the relationship between EC and Challenge Stress; and test hypothesis 5, 2, 6, 7 (see Figure 2). The analysis was controlled for gender, age, education, job type, intrinsic motivation, creative personality and job complexity. It was found that challenge stress was significantly associated with employee creativity ($\beta = .31, SE = .07, t = 4.29, p < .001$), thus, hypothesis 5 received support. PsyCap significantly affected employee creativity ($\beta = .41, SE = .10, t = 3.90, p < .001$), hence, hypothesis 2
was further supported in this model. In addition, challenge stress significantly predicts PsyCap (β = .33, SE = .08, t = 4.04, p < .001), as such, hypothesis 6 was supported. As the total effect between challenge stress and employee creativity was found to be significant, together with bootstrapping of the indirect effect on challenge stress and employee creativity through psychological capital with 95% confidence interval that did not include zero (β = .12, SE = .04; 95% CI [.05, .22]), this mediation model was established and hypothesis 7 was supported.

\[ \beta = .33^{***} \]

\[ \beta = .31^{***} \]

\[ \beta = .41^{***} \]

\[ \beta = .19, p < .01 \]

\[ \beta = .12, \text{Bootstrapped CI} [.05, .22] \]

\[ N = 113, *** p < .001. CI = \text{confidence interval.} \]
3.5. Regression Analysis on Psychological Capital

As the mediator PsyCap demonstrated its robust mediating effect on the relationship between challenge stress and employee creativity, a four-step regression model was further generated to examine associations with PsyCap (see Table 4). The addition of demographic variables in step 1 significantly added 11% predictive power to the model \((F (3/109) = 4.92, p < .01)\). The addition of creative personality and job complexity served as control variables to step 2 significantly added 16% predictive power to the model \((F (2/107 = 12.25, p < .001)\). The addition of team climate to step 3 significantly added 3% predictive power to the model \((F (1/106) = 5.40, p < .01)\), while the addition of intrinsic motivation to the final step added 2% predictive power to the model \((F (1/105) = 4.49, p < .01)\). Gender became significant in step 3 when team climate was added implying an association between male participants and team climate. Creative personality remained significant in the three steps it was entered, suggesting that creative personality is more likely associated with psychological capital. Intrinsic motivation was entered in step 4 adding beta \( .19, p < .05 \) to the equation and simultaneously drawing down team climate’s beta from \( .19, p < .05 \) to \( .14, p > .05 \), from significant to non-significant. With such change, it was inferred that intrinsic motivation was more likely to fully mediate the relationship between team climate and psychological capital.
Table 4

**Hierarchical Regression Model of Predictors on Psychological Capital**

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<th>Step 4 $\beta$</th>
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$R^2$ change: .11 .16 .03 .02

$df$: 3/109 2/107 1/106 1/105

$F$ change: 4.92** 12.25*** 5.40* 4.49*

*Note.* $N = 113$. *p* < .05; **p* < .01, ***p* < .001. $\beta$ = standardized coefficient.
Chapter 4: Discussion and Conclusions

4.1. Discussion

This study used regression analyses and two mediation models to examine the relationship of contextual factors, namely team climate and challenge stress; and employee creativity (EC) through personal psychological capacities and resources: PsyCap. The first mediation model confirmed that team climate did not positively predict EC. Accordingly, there was no mediating effect of PsyCap on the relationship between team climate and EC. Therefore, hypotheses leading to the mediating effect of PsyCap on team climate and EC were not supported. Regression analysis showed that PsyCap significantly predicted EC over and above challenge stress after controlling demographic and control variables. Subsequently, the second mediation model confirmed the finding on regression analysis that PsyCap partially mediated the relationship between challenge stress and EC. As such, hypotheses related to the mediating effect of PsyCap on Challenge stress and EC received support. A supplemental regression model was further generated to examine associations of PsyCap, the mediator confirmed in the present study. Regression analysis showed that intrinsic motivation significantly predicted PsyCap over and above team climate after having demographic and control variables controlled.

In the present study, it was found that team climate did not predict EC which was inconsistent with literature (e.g. Pirola-Merlo, 2010). Team climate itself has been
proven to relate to creative achievement in a quantitative review (Hunter et al., 2007).

Also, the evidence compiled by Mathisen and Einarsen (2004) indicated that climate measures could predict creativity and innovation in real-world settings. This study used a well-developed standardized measure, i.e. team climate inventory (TCI). It is one of two measures which have been reported to produce a stronger effect on team creativity and innovation (Mathisen and Einarsen, 2004). Another one is KEYS: Assessing the Climate for Creativity (Amabile et al., 1996) which emphasizes the environment for creativity, while TCI covers environments promoting both creativity and innovation (Mathisen and Einarsen, 2004). Although this inventory is not locally developed, this inventory in present study has adequate internal consistency ($\alpha = 0.94$). Also, the inventory in the present has a very implicit proposition that teams would be the norm of working settings in organizations (Mathisen and Einarsen, 2004).

While team structure seems more prevalent in organizations of western countries, it might not be the case in organizations of Chinese societies (Cardona, 2012). Therefore, the assumption that team structure has been built into every fabric of local organizations may be one of the reasons in explaining its insignificant relationship on employee creativity in this study. Without team structure or team design that could be clearly identified by employees, vision, participative safety, task orientation and support for innovation would be losing its significance or merely other employees’ affairs, with no bearing on participants’ concerns. As such, non-identification of team objectives, no buy-
in participation, disregard for search for excellence in work, and non-recognition of support for innovation might become common perceptions of these participants in the workplace. In addition, data in the present study were not collected from well-defined work units. As such, individual employee’s psychological relationships with their team, i.e. their identification with the teams (Ashforth & Mael, 1989; van Knippenberg & van Schie, 2000) could not be ascertained. In turn, team identification’s influence on the extent to which individual employees are motivated to engage in creative efforts would not be realized. Accordingly, without the team identification that participants were assumed to have, all “we”, “team members” or “people in the team” stated in the measures would merely be referred to other employees, not the participants themselves.

Regarding the finding that PsyCap mediated the relationship between challenge stress and employee creativity, it seemed a paradox. While challenge stress positively related to employee creativity, PsyCap mediating the relationship between challenge stress and employee creativity meant that PsyCap reduced the positive effect of challenge stress on employee creativity. If challenge stress could engender employee creativity, why was PsyCap needed to mediate the relationship? As research showed that though challenge stress has motivational effect on employee creativity, it has its negative impact on performance (Yuan, Li, & Lin, 2014). The fact is that stress engenders strains, regardless of the evidence that challenge stress is shown to be positively related to performance through motivation. Challenge stress is indeed a kind of stress in the form
of job demand. Every stress has stressors. It is these stressors stimulating and evoking the stress process, and consequently engendering strains such as anxiety, fatigue, exhaustion and possibly burnout at the end of the process (Jex, 1998). Strains, though distally related to the stressors, would accrue slowly as a function of repeated or prolonged exposure to stressors (Maslach & Schaufeli, 1993). The reason that stress engenders strains as an appraisal and coping process of stress inevitably involve emotional and cognitive effort. Verified by research, both kinds of stress may have negative, indirect relationships with performance through strains (Lepine et al., 2005).

Given the positive motivational nature inherent in challenge stress, some literature suggests management increase levels of challenge stressors together with practices to reduce and buffer the associated strains (Lepine et al., 2005). However, such suggestions may not absolutely induce positive impact on performance. Recent research has shown that people who are experiencing challenge stress may strive for better task performance at the expense of safety performance (Yuan, Li, & Lin, 2014). Therefore, despite the fact that challenge stress is conducive to employee creativity, it is believed that individuals who are experiencing challenge stress for longer periods of time may have greater risks for heart attacks, high blood pressure or other physical ailments such as ulcers (McQuade, 1972). As such, PsyCap may be needed here to balance this relationship.

PsyCap has been conceptualized as a form of positive psychological resource, using the term capital. It denotes one’s strength, perception, and attitudes towards work and life
(Avolio & Luthans, 2006; Luthans, Avolio, & Youssef, 2007). Some research has illustrated that employees’ PsyCap as a collection of positive states can help broaden their cognitive capacities to interpret negative effects that might occur with challenge stress. This illustration echoed with broaden and build theory (Fredrickson, 2001), which purports that positive states can help broaden people's momentary thought action repertoires and widen the array of the thoughts and actions that come to one’s mind and in turn broaden one’s habitual modes of thinking or acting (Fredrickson, 1998).

Furthermore, PsyCap is conceptually characterized as locating at the midway of a continuum dichotomized by “pure” states at one end and “pure traits at the other end (Youssef, & Luthans, 2012). Compared to “pure” states, such as transitory affect and “pure” traits, for example intelligence, the Big Five personality traits and Core Self Evaluations, PsyCap has been claimed to have state-like nature which is malleable and open to development (as cited in Dawkins, Martin, Scott, & Sanderson, 2013). If PsyCap can enhance employee creativity that challenge stress can do, developing PsyCap would be more beneficial to the well-being of employees, both in terms of happiness, the hedonic well-being and positive functioning, as well as the eudaimonic well-being aspects (Culbertson, Fullagar, & Mills, 2010).

Team climate, though not significantly associated with criterion variable in the present study, may serve as symbolic social cues that signal an invitation to work with others. According to research, such kind of cues can help fuel intrinsic motivation even
when employees work alone (Carr, & Walton, 2014). A broad increase in intrinsic motivation, for example reported task interest, spontaneous expressions of enjoyment and behavioral persistence, were shown to be elicited by mere cues of working together arising from and existing within this social situation.

The study in this sample revealed that length of age and service tenure did not have significant relationships with EC, which is consistent with the literature. Studies showed that age primarily had no bearing on core task performance, creativity and performance demonstrated in training, but did associate with other aspects of job performance such as organizational citizenship behaviors, safety performance and absenteeism (Ng, & Feldman, 2008). Regarding to job tenure, according to Ng, & Feldman’s (2013) meta-analyses, the relationships between job tenure with creativity and innovation behavior is weak, suggesting a perspective that as job tenure increases, employees are likely getting bored and less motivated at work as depicted in literature on job design. However, this weak relationship may not imply a negative relation to creativity, as such negative age stereotype related to creativity that most people commonly have seems not based on empirical evidence.

This study showed that males demonstrated stronger association with EC than females. This finding was consistent with the common phenomenon that males are overrepresented relative to females in terms of creative accomplishment or eminence across different professions ranging from politics and commerce to arts and sciences.
(Abraham Thybusch, Pieritz, & Hermann, 2014). However, in terms of creative potential, half of empirical research showed no significant difference while the other half recorded mixed findings, but at large, leaning towards an advantage for females (Pagnani, 2011). This disparity between creative accomplishment and creative potential among males and females has been attributed to socio-cultural and environmental factors, for example gender inequality in society and different levels of social support rendered to each gender (Pagnani, 2011).

4.2. Limitations

The first limitation was that self-rating of creativity was used in the present study to tap employee creativity, which might pose the risk of having common methods bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Arguably, employees themselves are most knowing about their own endeavors and contributions to creativity; and other employees may not be aware of their creativity unless these employees are actively showing off by means of impression management behaviors to gain supervisors’ and coworkers’ recognition (cited in Ng, & Feldman, 2012). Also, convergent validity among self-ratings, peer-ratings, and supervisor-rating of creativity has been showed in some research (Moneta, Amabile, Schatzel, & Kramer, 2010; Shally, Gilson, & Blum, 2009). In future studies, if arrangement allows, both self-rating and objective rating of creativity, such as supervisor rating should be adopted to ease the concerns of common methods bias and to use both ratings to ascertain possibility of convergent validity in
samples of Chinese societies.

The second limitation concerned the method of recruiting participants. Originally, the study design was to recruit participants on company base. However, in view of limited companies consenting to participate in the study and insufficient number of participants recruited from each of the consenting companies, 15% of the sample in the present study were recruited by means of convenience sampling. In addition, there was no ceiling cap for participants recruited from each company. As such, the range of participants from each company was quite wide, ranging from 6 to 39. Therefore, there might be the case that one company’s contextual factors with more participants might have greater influence on the findings. Future studies should allow more time in recruiting more companies and each company should have a ceiling cap for participants recruited.

The third limitation pertains to data on team climate collected not from well-defined work units. However, TCI is developed for use in collecting data in teams and aggregating individual responses to a team level (Mathisen, & Einarsen, 2004). Without such compliances to required study design and data aggregating analysis, the result cannot be fully ascertained. Future studies should address this issue.

Finally, given this study was conducted in a cross-sectional nature, causal ordering between the variables in developing two mediation models could not be assured. Future studies with a longitudinal design may help clarify this concern.
4.3. Practical implications

This study offers some practical implications regarding the usefulness of PsyCap. Given PsyCap’s uniqueness, employees’ PsyCap can develop over time. The malleable nature of psychological capital and its relationship with employee performance has been proved in a longitudinal study (Peterson, Luthans, Avolio, Walumbwa, & Zhang, 2011). With this evidence based value in PsyCap, recognition and investment in PsyCap for human resource development and organizational development especially in the arena of enhancing creativity and innovation in organizations should be highlighted. To date, research has mainly focused on the impact of leadership and training interventions for development of PsyCap (Avey, Reichard, Luthans, & Mhatre, 2011; Luthans, Avey, Avolio, & Peterson, 2010). However, little has been known about how to develop PsyCap through other means in organizations, such as contextual factors. Specifically, by fostering certain contextual factors, for example through job redesign or modification of undesirable organizational behaviors, such as non-supportive behavior to creativity and innovation, development among employees may be enhanced.

4.4. Future Research Directions

This study showed that challenge stress predicted PsyCap and PsyCap predicted employee creativity, which shed light on the possibility of contextual factors predicting PsyCap. Future research may explore more contextual factors that may help develop employees’ PsyCap in the workplace, opening up a new arena of research in antecedents
of PsyCap in terms of contextual factors. Nonetheless, since PsyCap is a relatively new construct, further attention and validation are definitely warranted to explore its possibilities (Dawkins et al., 2013). For example, creative personality has shown its predictive value in PsyCap in this study. Would its inclusion in one of the constellations of PsyCap help its development?

4.5. Conclusion

This paper heeded the calls to examine how psychological capital went beyond contextual factors and other verified control variables in predicting employee creativity. Overall, the present study indicated that PsyCap was predictive of employee creativity above and beyond demographic and control variables and has mediation effect on the relationship between challenge stress and employee creativity. This research suggests an urgent need to continue investigating the development and application of psychological capital in organizational performance, for example employee creativity in this study as well as in other life domains, such as relationships, education and health.
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Psychological capital and employee performance: A latent growth modeling


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Appendices

Appendix A: Sample's profile

<table>
<thead>
<tr>
<th>Variables</th>
<th>Categories</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
<td>45.1%</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>54.9%</td>
</tr>
<tr>
<td>Age</td>
<td>30 or below</td>
<td>28.3%</td>
</tr>
<tr>
<td></td>
<td>31 - 40</td>
<td>34.5%</td>
</tr>
<tr>
<td></td>
<td>41 - 50</td>
<td>28.3%</td>
</tr>
<tr>
<td></td>
<td>51 or above</td>
<td>8.9%</td>
</tr>
<tr>
<td>Education</td>
<td>Secondary F.7 or below</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>Tertiary or associate degree</td>
<td>23%</td>
</tr>
<tr>
<td></td>
<td>University</td>
<td>31%</td>
</tr>
<tr>
<td></td>
<td>Master degree or above</td>
<td>15.9%</td>
</tr>
<tr>
<td>Position</td>
<td>Operation &amp; clerical staff</td>
<td>42.5%</td>
</tr>
<tr>
<td></td>
<td>Officer &amp; supervisor</td>
<td>16.8%</td>
</tr>
<tr>
<td></td>
<td>Manager</td>
<td>32.7%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>8%</td>
</tr>
<tr>
<td>Job Type</td>
<td>Operation division</td>
<td>33.6%</td>
</tr>
<tr>
<td></td>
<td>Functional division</td>
<td>38.9%</td>
</tr>
<tr>
<td></td>
<td>Strategic marketing, R&amp;D</td>
<td>26.5%</td>
</tr>
<tr>
<td>Service Tenure</td>
<td>0 – 5 years</td>
<td>54%</td>
</tr>
<tr>
<td></td>
<td>6 – 10 years</td>
<td>26.5%</td>
</tr>
<tr>
<td></td>
<td>11 years or above</td>
<td>19.5%</td>
</tr>
<tr>
<td>Personal Monthly Income</td>
<td>$20,000 or below</td>
<td>46.7%</td>
</tr>
<tr>
<td></td>
<td>$20,000 above - $50,000</td>
<td>26.6%</td>
</tr>
<tr>
<td></td>
<td>$50,000 or above</td>
<td>23.9%</td>
</tr>
<tr>
<td></td>
<td>Missing data</td>
<td>5.3%</td>
</tr>
<tr>
<td>Company Size</td>
<td>&lt; 50 employees</td>
<td>12.4%</td>
</tr>
<tr>
<td></td>
<td>50 above to 100 employees</td>
<td>44.2%</td>
</tr>
<tr>
<td></td>
<td>100 employees or above</td>
<td>43.4%</td>
</tr>
</tbody>
</table>
Appendix B: Measures used in the present study