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Innovative Behavior of Employees:
A model of Antecedents and
Consequences, A Deeper Look at
Psychological and Organizational
Factors

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Abstract

Despite increasing importance of fostering innovation among employees, and the growing interest in Positive Organizational Behavior (POB) constructs, little empirical research has been conducted on the topic of innovation with POB. Moreover, though research proved significant relationship between positive psychological capital (PsyCap) and creative performance, no studies examined PsyCap with innovative behavior along with other antecedents. In addition, potential differential antecedents of innovative behavior have received insufficient attention. The present study integrated a number of streams of research on the antecedents of innovation and creativity to develop and test a model of innovative behavior. Regression analyses reveal that PsyCap, work characteristics, personal initiative, supportive climate, strategic attention and creative behavior predict innovative behavior which in turn affects satisfaction and engagement.

JEL Classification: M10, M14, M19

Keywords: innovative behavior, creativity, work design

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Introduction

Innovation is critical for countries to develop as it is the key to increasing market share and business profits and even to avoid bankruptcy (Baer & Frese, 2003; Dodgson, Gann, & Salter, 2005; George & Zhou, 2001; Kleysen & Street, 2001) since it is related to advances in knowledge that leads to better health, education and improvements in technology (West & Altink, 1996) and is beneficial for companies (Unsworth & Parker, 2003). Innovation involves the creation of a new product, service or process (De Brentani, 2001). Organizational conditions whether structural or social affects the innovation process (Kanter, 1988) whereby innovation, creativity and proactivity are becoming essential for organizational change (Rank, Pace, & Frese, 2004). Innovation is a result of creative ideas that are developed by individuals (Janssen, Vliert, & West, 2004) and this is why researches on innovation focused on personal and contextual factors that promote innovation (see West, 2002; West & Altink, 1996). However, innovation is a process that involves a degree of uncertainty, controversy, knowledge and teamwork (Kanter, 1988). Research on innovation is not just about technology and medicine but also psychology (West & Altink, 1996). In fact, studying innovation and what are its antecedents should not be at the technical process innovations only as some studies found no or moderate relationship between the implementation of process innovations such as Business Process Reengineering (BPR), Total Quality Management (TQM), Just-In-Time and others and performance (see Baer & Frese, 2003). One good reason might be the lack of other critical antecedents that complement the process innovations like organizational structure, culture, and climate (Douglas & Judge, 2001; Emery, Summer, & Surak, 1996; Baer & Frese, 2003). In fact, research on potential antecedents of innovative behavior has received insufficient attention (Rank et al., 2004). Several researchers have highlighted on the importance of psychological factors

to the success of innovations and on business objectives arguing that such research has been neglected (Baer & Frese, 2003; Rank et al., 2004). With the exception of few studies that linked positive psychology or POB constructs to innovation or creativity (see for example Baas, De Dreu, & Nijstad, 2008 and Vinarski-Peretz, & Carmeli, 2011), the link between POB constructs like PsyCap and innovation has been neglected. Innovations whether technical like new products or services or administrative like new ways of recruiting employees (West & Altink, 1996) requires employees to behave in an innovative way or to be able to implement their new ideas and process improvements. To do so, several antecedents are needed. These antecedents could be individual-related components like PsyCap, creative behavior and personal initiative, work-related like the degree of autonomy, feedback or significance the employee perceives, and finally strategic management-related like the strategic attention or degree of support for innovation that employees receive. The present study integrated a number of streams of research on the antecedents of innovation and creativity to develop and test a model of innovative behavior. Several researchers examined personal, psychological and organizational antecedents of creative outcomes (e.g., Amabile, 1998; Amabile & Gryskiewicz, 1987; Kanter, 1988; Tierney & Farmer, 2002; Zhou, 2003). However, innovation occurs when and ideas are implemented, not just generated. Therefore, it is crucial that we start focusing more on what is it that leads to the implementation of new ideas and initiatives. We also examined the positive outcomes of innovative behavior.

Hypothesized Model

Innovative behavior and Positive Outcomes

The importance of innovation and necessity of encouraging it is increasing worldwide (Anderson, De Dreu, & Nijstad, 2004; Janssen et al., 2004; Yuan &

Woodman, 2010). Studying innovation` as an independent variable that affects other variables has been suggested by Anderson and colleagues (2004) in their article that called for a shift in the innovation research. Innovation behaviors that might have been seen previously as inappropriate or disrespectful have become increasingly desirable in today's changeable fast-moving and competitive work environment (Anderson et al., 2004). Innovative behavior can be defined as "all individual actions directed at the generation, introduction and application of beneficial novelty at any organizational level" (Kleysen & Street, 2001, p.285). Innovative behavior is not limited to developing new product ideas and new technologies, but it also includes initiating new ideas or changes in administrative procedures that aims at improving work relations or the application of new ideas or technologies to work processes aiming at enhancing the effectiveness of work (Kleysen & Street, 2001; Yuan et al., 2010). It consists of various practices and behaviors such as opportunity discovery, idea generation, influential investigation, championing, and application (Jong & Kemp, 2003; Kleysen & Street, 2001; West & Farr, 1989).

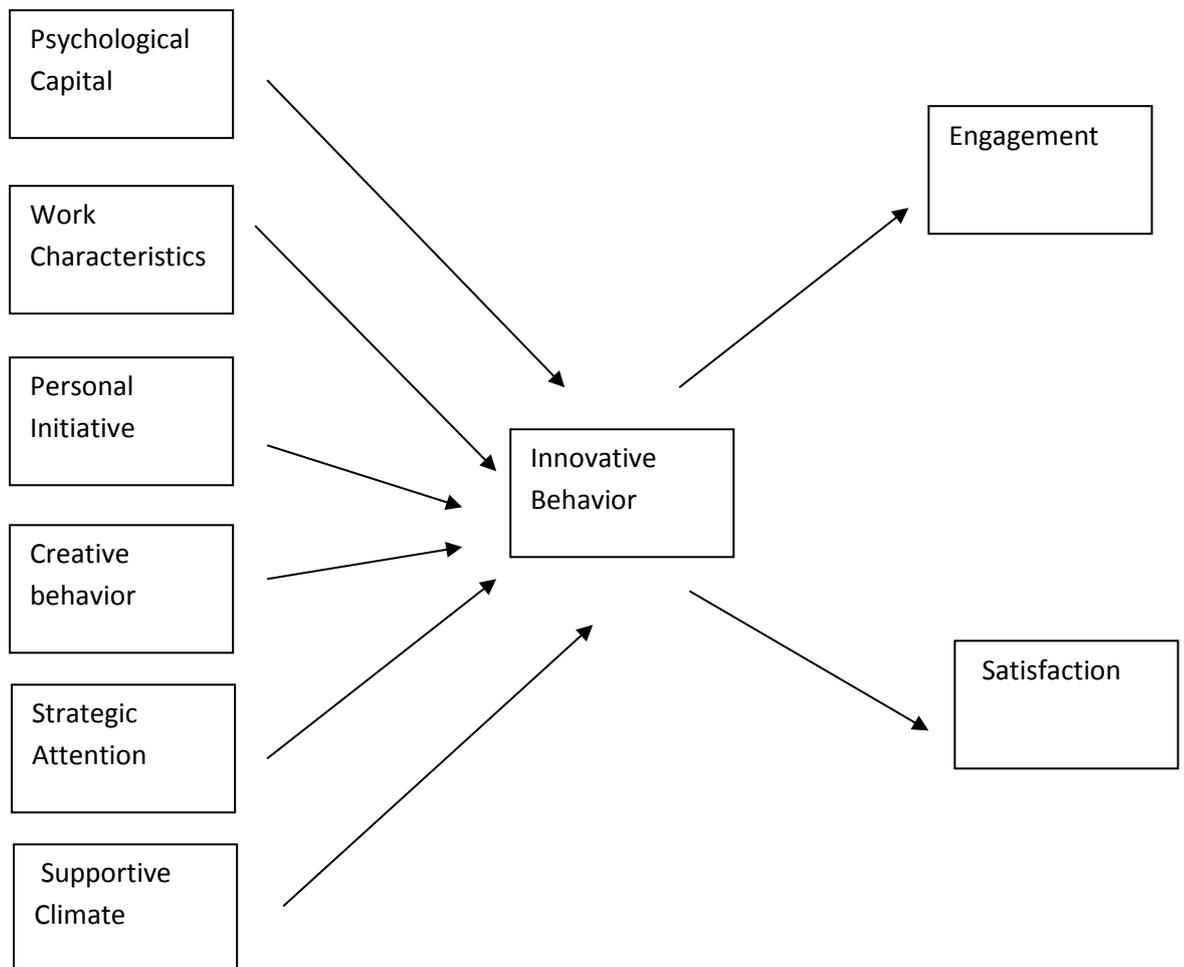
Engagement is defined as "the investment of an individual's complete self into a role" (Rich, Lepine and Crawford, 2010, p. 617). Several research studies examined the impact of engagement on innovative behavior (Chang, Hsu, Liou, & Tsai, 2013; Vinarski-Peretz, & Carmeli, 2011), however the impact of innovative behavior on engagement has never been examined despite its importance. According to Csikszentmihalyi (1996), creativity leads to a more fulfilling life and meaningful life. Creative achievements lead to more engagement in life whereby creative people experience flow (Sawyer, John-Steiner, Moran, Sternberg, Feldman, Nakamura, & Csikszentmihalyi, 2003). Creative people find joy and pleasure in pursuing their creative accomplishments which in turn leads to feelings of engagement (Sawyer et al., 2003). According to Csikszentmihalyi (1997), creativity leads to more wellbeing and happiness. The experience of creative achievements, which in this case describes innovative behavior since it involves implementation, leads to the feeling of flow (Sawyer et al., 2003), which is a positive state when you feel your skills are used to their utmost, a state that makes life worth living (Csikszentmihalyi, 2002; Nakamura & Csikszentmihalyi, 2002; Seligman, 1995, 2002a, 2002b). This feeling is closely related to engagement as defined by Rich and colleagues (2010) and as measured in the current study whereby employees who are engaged choose to invest their affective, cognitive,

and physical energies simultaneously. In their article, Rich and colleagues (2010) classified engagement into three types of engagement; physical, cognitive and emotional whereby engaged employees are describes as "being psychologically present, fully there, attentive, feeling, connected, integrated, and focused in their role performances" (p. 619). The fact that engaged employees are those who invest their physical, emotional and cognitive energies into their work roles makes it a closely linked concept to flow. In other words, if creative achievements lead to flow then it should lead to engagement as flow involves a higher and more deep level of using your skills and energies to the most so that you feel absorbed in the work you are doing. Therefore, it is likely to assume that innovative behavior should lead to engagement.

Research on innovative behavior and satisfaction has been very few and examined the impact of job satisfaction on innovative behavior (Bysted, 2013; Han-Jen, 2014) and not vice versa. Based on the above link between creative achievements and flow, it is likely to assume that employees who are belt o implement their creative ideas are more likely to be satisfied about their jobs. Innovative cultures influence employees' levels of satisfaction, commitment, and cohesion (Odom, Boxx, & Dunn, 1990). In jobs that require a degree of creativity, employees' satisfaction might suffer if the job settings are not enhancing creativity (Shalley, Gilson, & Blum, 2000). Innovative employees who have creative minds might get de-motivates and so unsatisfied with their jobs if their ideas are not implemented. Therefore, we suggest that innovative behavior should lead to more satisfaction.

H1: Innovative behavior relates positively to employee satisfaction and engagement.

Figure 1. The Hypothesized Model



Innovative behavior Antecedents

Innovation research has flourished over the last 40 years as organizations started to change from bureaucratic and rigid to more flexible, flat structures where innovation and team work are fostered (Anderson et al., 2004). Several research studies examined factors affecting innovative behavior at three levels of analysis; the individual, work group, and the organization (for major reviews, see Randall, 2005; Amabile 1996a, 1996b; Amabile, T., & Gryskiewicz, 1987; West, 2001). In their article, Anderson and colleagues (2004) summarized the findings of factors affecting innovation or creativity where at the individual level factors included personality characteristics of proactivity, self-confidence and originality, motivation, and cognitive ability, at the work-level, factors included job characteristics, at the work group level, factors included team climate and team member characteristics, and finally, at the organizational level,

culture, strategy, and structure were among the factors that influenced innovation. Though job characteristics, supportive climate, strategic attention, personal initiative (PI) and creativity were examined before, they were not examined in one model and were not necessarily examined as predictors for innovative behavior but for the innovation process or other types of innovative behavior related concepts like creativity or creative performance. Besides, PsyCap with its four components are added to the model where such relationship has never been examined before with innovation or innovative behavior despite its significance. PsyCap as well as its four components were found to predict creative performance (Sweetman, Luthans, Avey, Luthans, 2006). In addition, some aspects of work characteristics were addressed but not all task and knowledge characteristics like in the current study. In the below lines, we highlight on the theoretical linkages and hypotheses development for the antecedents of innovative behavior.

Innovative Behavior and Creativity

We conceptualize innovative behavior as complex behavior consisting of activities relevant to both the generation of new ideas and the awareness or implementation of new ideas (see Yuan et al., 2010). Creative behavior is therefore a related concept. In their article about the “routinization” of innovation research, Anderson and colleagues (2004) stressed on the importance of defining innovation and how it differs from individual creativity. According to Anderson and colleagues (2004), innovation differs from creativity in that it involves idea generation and application while creativity can refer to idea generation alone. They also highlighted in the fact that innovation must present intended benefit while this is not a must in the case of creativity.

As mentioned earlier creativity is about the introduction and generation of new ideas while innovation involves not only the generation of ideas but also the implementation of such ideas (Anderson et al., 2004; George & Zhou, 2001). Creative performance was found to be crucial for an organization’s survival and for organizations to achieve competitive edge (Amabile, 1998; George & Zhou, 2001). Creativity has often been viewed as an antecedent of firm level innovation (Amabile, 1996; Amabile, 1988; Madjar, Oldham, & Pratt, 2002). Oldham and Cummings (1996) defined creative performance as “products, ideas, or procedures that satisfy two

conditions: (1) they are novel or original and (2) they are potentially relevant for, or useful to, an organization" (p.608). Zhou (2003) defined creativity as "employees' generation of novel and useful ideas concerning procedures and processes used at work" (p.413). However, creative ideas might not be converted into innovative products due to the unacceptability of the field or the market to the creative idea itself (Nakamura & Csikszentmihalyi, 2001). Research showed that intrinsic motivation leads to increased creativity and innovation (Amabile, 1997; Spreitzer, 1995). In addition, creative performance was found to be an antecedent to innovation (Amabile, 1988; Madjar, Oldham, & Pratt, 2002). According to Oldham and Cummings (1996), creative performance is not just about ideas; it is about products and procedures produced at the individual level whereas innovation refers to the successful implementation of these products or procedures at the organization level. Therefore if creativity is about the creation of ideas while innovation is about implementation then creativity should be a prerequisite for innovation.

H2: Creative behavior relates positively to innovative behavior.

Innovation and Positive Psychological Capital

Positive organizational behavior (Luthans 2002a; 2002b; Wright, 2003) has its roots in the field of positive psychology which was initiated by positive psychologist Martin Seligman (Seligman, 2007; Seligman & Csikszentmihalyi, 2000; Seligman, Steen, Park, & Peterson, 2005; Sheldon & King, 2001). Positive psychology focuses on the study of positive emotions, positive traits and positive institutions (Seligman et al., 2005). Positive psychology at the subjective level is mainly about "valued subjective experiences" like well-being and satisfaction. At the individual level, it is about positive traits like courage, wisdom, forgiveness, spirituality, and originality. While at the group level, it is about work ethics, responsibility, and tolerance (Seligman & Csikszentmihalyi, 2002). Seligman (2007) defined positive psychology as "the study of positive emotion, of engagement, and of meaning, the three aspects that make sense out of the scientifically unwieldy notion of happiness" (p.266).

The positive psychology movement was triggered as psychologists realized that for so long their main focus was on preventing problems, neglecting the competency building dimension (Seligman & Csikszentmihalyi, 2002; Luthans 2002a; 2002b; Money, Hillenbrand, & Camara, 2008). As stated by Seligman and his colleagues

(2005), "it makes sense to study what is right about people in addition to what is wrong" (p. 413). Thus, positive psychology is an attempt to encourage psychologists to start adopting a more open point of view regarding what human beings could do or have (Sheldon & King, 2001).

Since the origin of organization behavior, the focus has been on managerial dysfunctions and employee problems without paying much attention to positive capacities that are more likely to have an impact on performance and productivity (Luthans, 2002a; 2002b; Wright, 2003; Wright & Quick, 2009). In a computer search about psychology literature, Luthans (2002b) found approximately 375,000 articles on negative constructs like fear, depression and anxiety, and only about 1000 articles on positive concepts and capacities. Moreover, for the past decade, positively-oriented bestselling books like Norman Vincent Peale's message of the power of positive thinking and Steven Covey's seven habits of highly effective people have approached positivity in the workplace but were not theory and research driven (Luthans 2002a; 2002b). Thus, Positive organizational behavior is about bringing the positive psychology concepts and applications to the workplace (Luthans 2002a). Luthans (2002b) defined positive organizational behavior as "the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today's workplace"(p.59).

A psychological resource capacity within the defined POB should include the following criteria: (a) The capacity should be theory-based, researchable and measurable (b) the capacity must also be "state-like" or open to development and have a demonstrated performance impact (Youssef & Luthans, 2007; Luthans, Avolio, Avey, & Norman, 2007b). Thus, the main focus of positive organizational behavior (POB) is on state-like variables unlike positive psychology or positive organizational scholarship that focus on trait-like variables. Examples of constructs that meet these criteria are confidence, emotional intelligence, hope, optimism, and happiness or subjective well-being (Luthans 2002a, 2002b; Wright, 2003).

The capacities that best meet the above-mentioned criteria and have been identified to date are self-efficacy, hope, optimism and resilience (Luthans & Youssef, 2004; Luthans et al., 2004). In the below lines, we describe how each of the four components of hope, optimism, self-efficacy and resilience, as well as PsyCap as a core

construct are related to innovative behavior. Several researchers examined personal and psychological antecedents of creative outcomes (e.g., Amabile, 1998; Amabile & Gryskiewicz, 1987; Kanter, 1988; Tierney & Farmer, 2002; Zhou, 2003). These studies are above all significant here as the variables we investigated have been referred to as intrinsic motivational propensities (Luthans, Avolio, Avey, & Norman, 2007).

Self-efficacy

The first component of PsyCap is self-efficacy. Self-efficacy is defined as "an individual's convictions (or confidence) about his or abilities to mobilize the motivation, cognitive resources, and courses of action needed to successfully execute a specific task within a given context" (Stajkovic & Luthans, 1998b, p.66). Self-efficacy is crucial for success and achievements. That is, for a person to achieve a task or a goal, it requires not only skills but also beliefs of self-efficacy that could help out to his/her skills well (Bandura, 1993).

Stajkovic & Luthans, (1998b) identified three dimensions for self-efficacy that are crucial for its understanding. First, the magnitude of efficacy expectations, which refers to the level of task difficulty. The second dimension is the strength of efficacy expectations, or how confident an employee is about performing a certain task. People who have self-efficacy are able to find out ways of exercising control even when there are few chances or many limitations (Bandura, 1993). The third dimension is generality and refers to whether or not efficacy is indiscriminate across tasks.

As for the determinants of self-efficacy, Bandura (1997) has identified four categories of experiences that determine efficacy beliefs. First, self-efficacy could be enhanced through accomplishing a given task. Second, is "Vicarious learning" could also increase self-efficacy, which is mainly about the social environment in which the employee works. The employee simply observes experienced individuals performing a similar task and is then influenced by them. Third is the verbal persuasion whereby the employee is somehow inspired or motivated through encouragement and focusing on enhancing the belief that he/she "has what it takes". The last determinant is the Psychological arousal.

The practical implications that self-efficacy has for human performance can no longer be overlooked by managers and professionals as employees who perceive themselves as highly efficacious will trigger sufficient effort that should produce successful outcomes or results (Stajkovic & Luthans, 1998b). On the other hand, a

person who is low in self-efficacy will have doubts that he/she can do what is needed to achieve a certain task (Bandura, 1993). A meta-analysis conducted by Stajkovic and Luthans (1998a) showed that self-efficacy is related to work-related performance. More specifically, they found a significant weighted average correlation of .38 between self-efficacy and performance. As a positive state-like capacity, self-efficacy was found to be positively related to individual OCBs (Organization citizenship behaviors), and negatively related to organizational cynicism, intentions to quit, and counterproductive workplace behaviors (Avey, Luthans & Youssef, 2009). Moreover, Avey, Wernsing and Luthans (2008) examined the relationship between self-efficacy as a component of Positive psychological capital and positive emotions. They found a significant relationship between efficacy and positive emotions that in turn were related to positive attitudes like engagement. Moreover, a study by Tierney and Farmer (2002) showed that there is a positive relationship between creative self-efficacy, a new construct that combines self-efficacy with creativity, and creative performance. Among the characteristics of creative people is self-confidence (Barron & Harrington, 1981). People who are more self-efficient are more likely to take risks (Shane, Locke, & Collins, 2003) whereby risk-orientation was identified as main factors affecting the implementation of novel ideas (Amabile, & Gryskiewicz, 1987). Finally, creative self-efficacy among students was found to predict innovative behavior (Li & Wu, 2011). Thus it is likely to assume that self-efficacy is related to innovative behavior.

Hope

The term "Hope" is used in our daily language but as discussed here hope is based on the theory and research of C. Rick Snyder. Hope is defined as “a cognitive set that is based on a reciprocally derived sense of successful (a) agency (goal-directed determination) and (b) pathways (planning of ways to meet goals) (Snyder et al., 1991, p.571). Snyder (2002) defined hope more precisely as “the perceived capability to derive pathways to desired goals, and motivate oneself via agency thinking to use those pathways” (p.249).

The agency component refers to individuals’ thoughts about their ability to initiate and prolong movement toward goal accomplishment (Peterson & Byron, 2008). Agency can be viewed as having the will to meet goals (Snyder et al., 1991). Pathways are cognitive routes to goals (Snyder et al., 1996). Thus, the pathways component refers to one's sense of ability to generate ways or means to meet these goals (Snyder et al.,

1991; Snyder et al., 1996). Together, the two components make the will or the "I believe I can do it" and the way or the "I believe there are so many ways".

As proposed by Snyder and his colleagues (1991, 1996), both components should be present if a person is to maintain a movement in his /her life. For example, one might have the will (agency) but lacks the way to meet the goals (pathways). On the contrary, one might have the sense of pathways but without the agency. However, to possess hope as defined and operationalized, one should have both, the will or motivation to accomplish a specific task or goal and the ways so as to achieve such goals.

Though agency and the pathways help individuals achieve their goals (Peterson & Byron, 2008), one might be high in hope and yet not achieve his or her goals (Feldman, Rand, & Kahle-Wroblewski, 2009). However, Feldman et al., (2009) argued that hope's two components of pathways and agency lead an individual to "behave so as to attain personal goals" so it serves as the cognitive basis needed to attain such goals. In their study about hope and goal attainment, they found out that hope's agency component is related to goal attainment. As for the pathway component, it should lead to the creation of different strategies so as to achieve the goals (Peterson & Byron, 2008).

Hope differs from self-efficacy in that hope covers the cognitive elements of pathways and agency so it includes planning and motivation. However, self-efficacy is concerned with the belief that one can perform a certain task or behavior (Feldman et al., 2009). However, high hoppers' emotions are flavored with friendliness, happiness and confidence (Snyder 2002).

Hope theory has received considerable support through empirical research in numerous settings. Research showed that hope is related to academic and sports achievement (Curry, Snyder, Cook, Ruby, & Rehm, 1997), goal attainment (Feldman et al., 2009), and performance (Peterson & Byron, 2008; Peterson, Gerhardt, & Rode, 2006). A study that is related to the current study was done by Peterson and Byron (2008) where they examined the relationship between retail sales associates, mortgage brokers, and executives' level of hope and its relationship to job performance. Results showed that high hope employees had significantly higher job performance. In the same study, the authors examined whether more hopeful employees tend to solve work-

related problems in a way other than that of less hopeful employees. Results showed that more hopeful employees provided better and more solutions to a specific problem. So, the study provided more insight into why more hopeful employees may perform better by developing innovative solutions to problems.

As a positive state-like capacity, Avey and colleagues (2009) examined the relationship between hope and work outcomes. Results showed that hope is positively related to individual OCBs (Organization citizenship behavior), and negatively related to organizational cynicism, intentions to quit, and counterproductive workplace behaviors. Moreover, Avey and colleagues (2008) examined the relationship between hope as a component of Positive psychological capital and positive emotions. They found a significant relationship between hope and positive emotions that in turn were related to positive attitudes like engagement. Moreover, hope has been found to be positively related to satisfaction (Luthans & Youssef, 2007; Luthans et al., 2007b; Luthans et al., 2008), work happiness, and commitment (Youssef and Luthans, 2007). Related to the current study, hope was found to be related to creative performance (Sweetman et al., 2010). The role of goals and how they make the first and most important component in any action by employees provide support for our hypothesis (see Frese & Zapf, 1994). Since innovative behavior consists of opportunity exploration which is mainly about identifying new opportunities (Kanter, 1988), it is likely to assume that individuals who are hopeful are more likely to be innovative as they generate pathways to their desired goals.

Optimism

The third POB criteria-meeting capacity is optimism, which is defined by Seligman (1995, 2006) as an attributional or explanatory style whereby an optimistic person explains positive events in terms of personal, permanent, and pervasive universal causes and negative events in terms of impersonal, temporary, and situation-specific ones. In everyday language, an optimist is the one who always expects positive and pleasing outcomes for the future and the pessimist on the contrary is the one that expects negative outcomes and is constantly having negative thoughts (Scheier & Carver, 1985; Luthans et al., 2007b). Thus, optimism is mainly about expectancy judgment (Lee, Ashford & Jamieson, 1993). On the other hand deliberately optimistic people might expose themselves to higher risks or negative consequences when they

underestimate the consequences of a certain act just because they are optimistic (Peterson & Chang, 2003).

Optimism has been linked to a variety of positive outcomes like good morale, effective problem solving, academic, political and occupational success, happiness, achievement, good health and even long life. On the contrary, pessimism has been linked to depression, failure and passivity (Peterson, 2000). Innovation, team orientation and risk taking should be related to the degree of optimism of employees (Medlin, Jr., & Gaither, 2010). Though optimism has been linked to innovative behavior of students (Li & Wu, 2011), no research examined this relationship at the workplace. Optimists are likely to produce new ideas since they have positive expectations about the success of their ideas.

As a positive state-like capacity, a study by Avey and colleagues (2009) showed that optimism is positively related to individual OCB (Organization citizenship behavior), and negatively related to organizational cynicism, intentions to quit, and counterproductive workplace behaviors. Moreover, Avey and colleagues (2008) examined the relationship between optimism as a component of Positive psychological capital and positive emotions. They found a significant relationship between optimism and positive emotions that in turn were related to positive attitudes like engagement. Moreover, optimism has been found to be positively related to satisfaction (Luthans & Youssef, 2007; Luthans et al., 2007b), and work happiness (Youssef and Luthans, 2007). Therefore, a person who is high in optimism is likely to be high in innovative behavior.

Resilience

During the 1970s, a group of psychologists started to raise the issue of resilience in children who have experienced adversity or risk (Masten, 2001). Masten (2001) defined resilience as " a class of phenomena characterized by good outcomes in spite of serious threats to adaptation or development" (p.288). As a positive psychological state, resilience is defined as " the positive psychological capacity to rebound, to 'bounce back' from adversity, uncertainty, conflict, failure or even positive change, progress and increased responsibility" (Luthans, 2002a, p.702). This process of bouncing back is occurred through the positive assessment of risks and personal assets (Luthans, Vogelgesang, & Lester, 2006). As highlighted by Amabile (1996a), creative

thinking, which in turn should lead to innovative behavior or is a component of innovative behavior (Fay & Frese, 2001), depends on personality characteristics related to orientation toward risk-taking, tolerance for ambiguity, and most importantly insistence in the face of frustration. Therefore, resilience is characterized by proactive responses in the face of failure or even great success. From this link, we can conclude that more resilient individuals are more likely to be innovative as they are more likely to take risks and are more willing to accept change.

Resilience requires two basic judgments: (1) that there must be current or past confirmable risk to overcome and (2) that the quality of adaptation is evaluated as “good” or “ok” (Masten, 2001). As Coutu (2002, p.46) states “Confronted with life’s hardships, some people snap, and others snap back”. Resilience results in most cases from the function of "basic human adaptational system" (Masten, 2001). However, individuals vary in the degree of adaptability and the way they respond to the changes that they face (Block & Kremen, 1996) as problems occur when these systems are not operating normally (Masten & Obradovic, 2006). Adaptational systems could be learning systems of the human brain which involves problem solving, mastery motivation system which involves self-efficacy processes, and also cultural and social systems (Masten & Obradovic, 2006).

Resilience research has been approached from either a variable-focused or a person-focused approach (Masten, 2001). Variable-focused approach examines the linkage between the degree of risk or adversity, outcome, and possible qualities of the individual that may protect the individual from the negative consequences of such risks and adversities. On the other hand, person-focused approach focuses on comparing individuals who are resilient with those who are not (Masten, 2001). Resilient people hold three characteristics: acceptance of reality that would increase one's ability to survive, a belief that life is meaningful even in terrible times, and an ability to cope and improvise (Coutu, 2002).

According to Fredrickson (2000), individuals might differ in their interpretation and use of positive emotions because of their level of resilience. In her study, resilience predicted positive emotions. In the workplace, resilience is extremely important especially in the era of downsizing, restructuring and continuous major changes. One’s level of resilience could be more important than experience or education when it comes

to succeeding (Coutu, 2002). Past research on resilience has been limited to clinical areas of Psychology. However, Luthans and colleagues (2007a; 2008a, 2008b) have examined the impact of resilience on work outcomes. For example, Youssef and Luthans (2007) found a significant relationship between resilience and job satisfaction, work happiness and organizational commitment.

As a positive state-like capacity, a study by Avey and colleagues (2009) showed that resiliency is positively related to individual OCB (Organization citizenship behavior), and negatively related to organizational cynicism, intentions to quit, and counterproductive workplace behaviors. Moreover, Avey and colleagues (2008) examined the relationship between resilience as a component of Positive psychological capital and positive emotions. They found a significant relationship between resilience and positive emotions that in turn were related to positive attitudes like engagement.

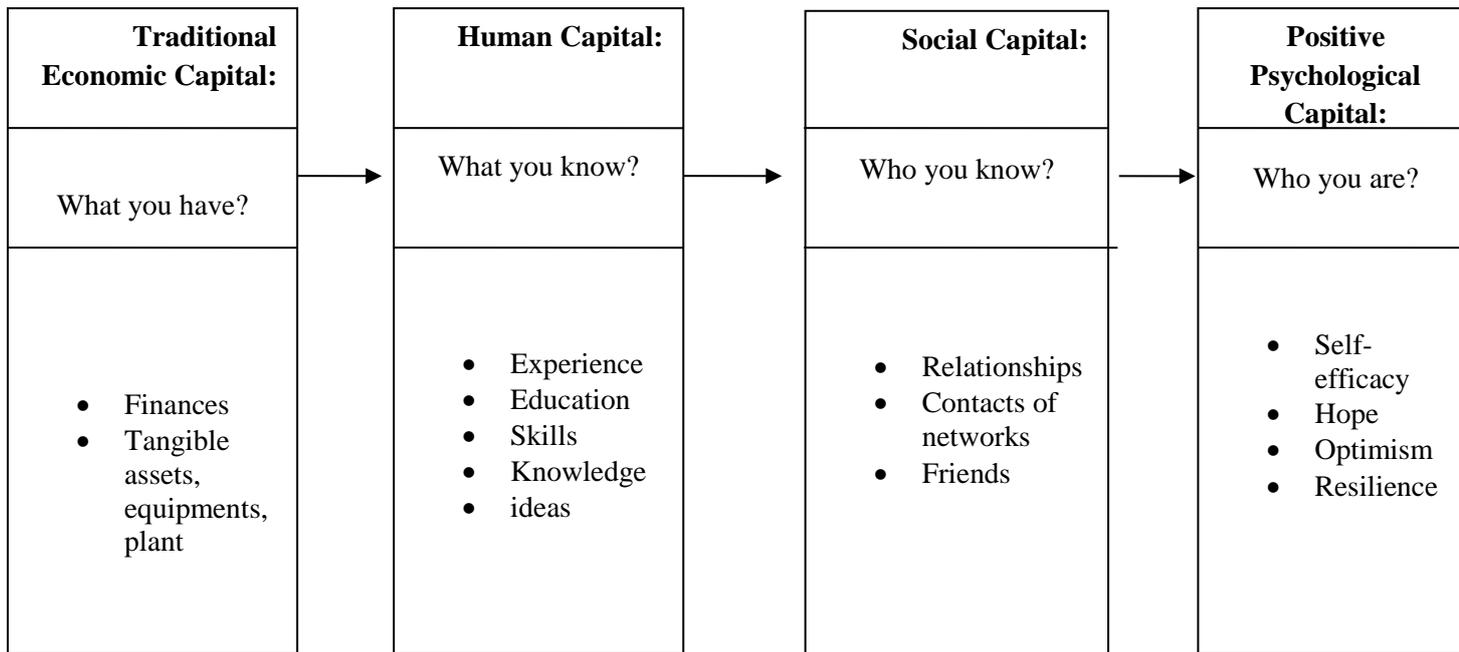
Related to this study, Luthans et al. (2005) found a significant relationship between the resilience of factory Chinese workers and their performance whereas performance was measured by supervisor ratings and by merit increases for a part of the sample. Another study that was also conducted on Chinese workers showed a significant positive effect between resilience and performance as measured by supervisor ratings (Luthans et al., 2008b). In addition Luthans and colleagues (2007b) examined the relationship between resilience and satisfaction and performance and found a significant positive relationship between them. Their study was divided into two studies whereas in study 1 performance was self-rated and in study 2 it was measured by actual performance evaluations. Resilience was also found to be related to performance in other studies (Youssef & Luthans, 2007; Luthans et al., 2008a).

Using the previously-mentioned criteria of being open to development and research and theory-based, Luthans and Youssef (2004) proposed four POB capacities which are; self-efficacy, hope, optimism and resilience. The four state-like capacities are included as a combined construct to form what Luthans and his colleagues have referred to as positive psychological capital or PsyCap (Luthans et al., 2007b; Luthans et al., 2004; Luthans & Youssef, 2004). Luthans and colleagues (2007a, p. 3) defined psychological capital or PsyCap as "an individual's positive psychological state of development and is characterized by: (1.) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2.) making a positive

attribution (optimism) about succeeding now and in the future; (3.) preserving toward goals, and when necessary, redirecting paths to goals (hope) in order to succeed; and (4.) when beset by problems and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success".

Positive psychological capital or PsyCap in short is mainly about "Who you are" and is differentiated from human capital "what you know" and financial capital "what you have" and "what you can become" (Luthans et al., 2004; Luthans & Youssef, 2004; Luthans et al., 2007a). PsyCap has been found to be an additive variable to human and social capital equation (Larson, 2004). Several studies examined the between PsyCap and performance (Luthans et al., 2005; Luthans et al., 2007; Luthans et al., 2008a; 2008b) and found a significant positive relationship between PsyCap and performance. Figure 2 illustrates the four different types of capital. According to West (2001), when individuals feel positive, they are more likely to innovate. However, up to our knowledge, the link between positive psychology constructs like hope and optimism has never been tested in relationship to innovative behavior.

Figure 2. Expanding Capital for Competitive Advantage (Luthans et al., 2004)



Research proved that psychological safety is a crucial antecedent for innovation (West & Altink, 1996). Previous research showed that psychological empowerment leads to increased innovation (Spreitzer, 1996). Psychological empowerment is defined as “intrinsic motivation embodying a set of four psychological states reflecting an individual’s orientation toward his or her work: meaning, self-determination, impact, and competence” (Alge, Ballinger, Tangirala & Oakley, 2006, p.223). Psychological empowerment was also found to be related to creative performance (Alge et al., 2006). Creative individuals own up positivity, optimism or hope, which allow them to continue to be creative and stay fully engaged (Sawyer et al., 2003). Therefore, based on the above linkages and the ones discussed earlier, it is likely to assume that the four psychological states as well as PsyCap as a core construct could predict innovative behavior.

H3.1: Employee's levels of hope, optimism, resilience and self-efficacy relates positively to innovative behavior.

H3.2: Employee's PsyCap relates positively to innovative behavior.

Innovative Behavior and Job characteristics

The role that job characteristics plays in fostering creativity has been highlighted by many researchers (Amabile & Gryskiewicz, 1987; Axtell, Holman, Unsworth, Wall, Waterson, & Harrington, 2000; Frese, Garst, & Fay, 2007; Ohly & Fritz, 2010). Though previous research examined relationships between some aspects of work characteristics like time pressure and job control (Ohly & Fritz, 2010), autonomy (Axtell et al., 2000), and complexity (Amabile et al., 1996) on creativity, up to our knowledge, we did not find any previous research that investigated the impact of all work characteristics of task and knowledge characteristics together with innovative behavior. Previous research on work characteristics focused on creativity (Amabile et al., 1996; Ohly, Sonnentag & Plunkate, 2006) or innovation (Damanpour, 1991), and not innovative behavior, or investigated the relationship between some dimensions of work characteristics on innovative behavior (e.g., Scott & Bruse, 1994) but not all task and knowledge characteristics together. In the coming lines we will examine each dimension of work characteristics and how it relates to innovative behavior. The work design theory by Hackman and Oldham (1976) will be explored in addition to the Work Design Questionnaire (WDQ) by Morgeson and Humphrey (2006).

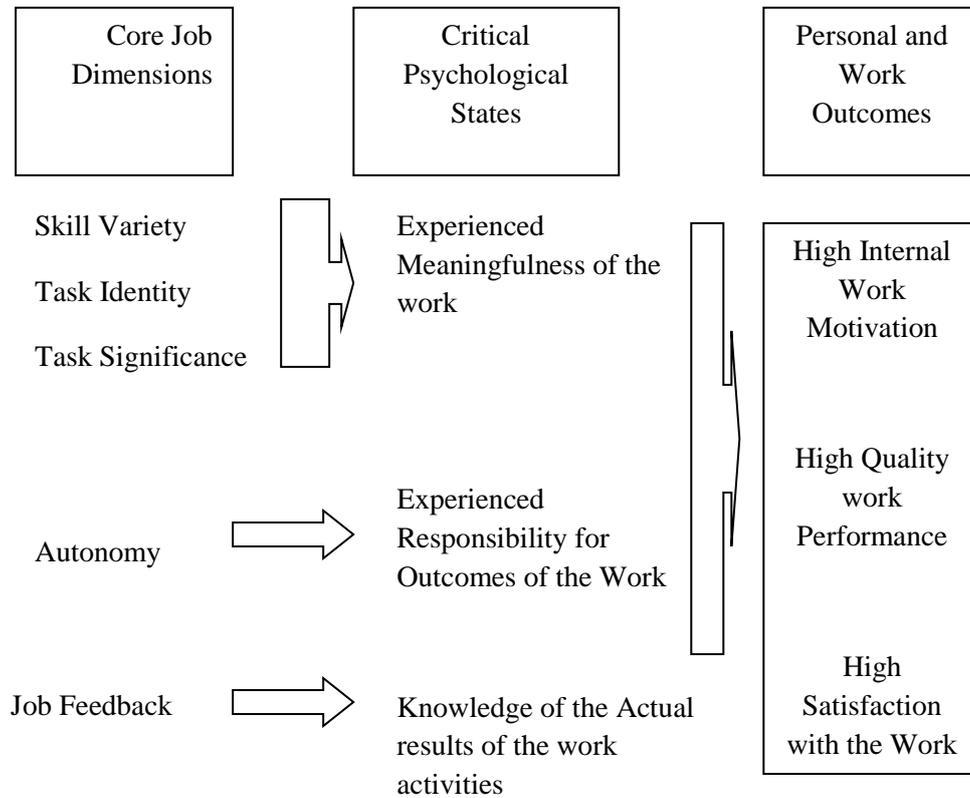
Hackman and Oldham (1975, 1980) introduced job characteristics theory to explain the dimensions in which employees would be intrinsically motivated when they perform a job. By enhancing jobs along the five dimensions, organizations can encourage positive work attitudes as well as increased work quality. The five dimensions are: (1) variety (the degree to which a job requires the use of a number of different skills and talents); (2) identity (the degree to which the job requires completion of a "whole" piece of work, or doing a task from beginning to end with a visible outcome); (3) significance (the degree to which the job has a substantial impact on the lives of other people); (4) autonomy (the degree to the job provides substantial freedom); and (5) feedback (the degree to which the job provides clear information about performance levels).

The theory proposes that positive outcomes like motivation, satisfaction and performance would result when "critical psychological states" are present. These states include: "(1) experienced meaningfulness of the work, (2) experienced responsibility for the outcomes of the work, and (3) knowledge of the results of the work activities"

and are created by the existence of the five job dimensions (Hackman and Oldham, 1976, p.160). The psychological state of experienced meaningfulness of the work is mainly obtained by the three dimensions of task significance, skill variety and task significance. If any dimension of the three dimensions is missing, meaningfulness drops (Hackman, Oldham, Janson & Purdy, 1975). Experienced responsibility is enhanced by job autonomy. Knowledge of the results is enhanced when the job is high in the dimension of Feedback (Hackman & Oldham, 1976; Hackman et al., 1975). Moreover, if any of the psychological states is missing however, motivation is decreased. That is, the theory entails that motivation will result only if the job is high in at least one of the three dimensions that results in the psychological state of meaningfulness, and both feedback and autonomy as well (Hackman et al., 1975).

In addition, three factors were suggested as moderators to the job characteristics-critical states relationships and the critical states-work outcomes relationships (Fried & Ferris, 1987). These are knowledge and skill growth, need growth, and context satisfaction (Hackman & Oldham, 1976; Fried & Ferris, 1987). Hackman and Oldham (1980) described growth needs as needs for development, learning and accomplishments. People who are high in growth-need strength (GNS) will be affected by job enrichment while people who are low in growth-need strength might not be affected at all (Hackman et al., 1975). The job characteristics model is shown in figure 3.

Figure 3. A theoretical model relating the core job dimensions, the critical psychological states, and on-the-job outcomes (as moderated by employee growth need strength) (Hackman and Oldham, 1976).



There is evidence that when job characteristics are manipulated, job holders' perceptions about their job are changed. Finally, several studies examined the relationships between job characteristics and work outcomes. Researchers found significant relationships between job characteristics and job satisfaction (Spector & Jex, 1991), goal commitment and intrinsic motivation (Piccolo & Colquitt, 2006). Moreover, skill variety and job significance have been found to have a significant relationship with Organizational citizenship behavior, whereas job identity, job feedback and job autonomy were not found to have a significant relationship with it (Chiu & Chen, 2005).

The Work Design Questionnaire (WDQ) developed by Morgeson and Humphrey (2006) included a more complete version for work design dimensions where they reviewed the work design literature and developed a measure to tap those work characteristics. They classified work characteristics into task characteristics, which is

similar to Hackman and Oldham (1976), that included autonomy, task variety, task significance, task identity, task identity and feedback from job, and knowledge characteristics which included job complexity, information processing, problem solving, skill variety, and specialization. Their classification also included social characteristics like social support and interdependence and contextual characteristics like ergonomics and physical demands. In the current study we focus on task characteristics and knowledge characteristics. Research showed that intrinsic motivation, which is an outcome for job characteristics, leads to increased creativity and innovation (Amabile, 1996a, 1996b; Amabile & Gryskiewicz, 1987; Spreitzer, 1995). A meta-analysis by Harrison and colleagues (2006) showed how work characteristic dimension of autonomy predicted creativity at work. Besides, if job characteristics are ought to increase intrinsic motivation which is a major factor for the implementation of novel ideas then it is likely to assume that job characteristics should lead to innovative behavior. Individuals working on jobs characterized by high levels of autonomy, feedback, significance, identity and variety (Hackman & Oldham, 1980) are more likely to experience intrinsic motivation and so produce creative ideas (Shalley, Zhou, & Oldham, 2004).

Job complexity should be related to innovative behavior for a couple of reasons. First, according to Amabile and colleagues (1996), challenging work fosters creativity. Besides a study by Tierney and Framer (2002) found that employees in complex jobs showed more creative self-efficacy. Employees were found to produce creative work when they worked on complex and challenging job (Oldham & Cummings, 1996). Systematic problem solving was also found to predict innovative behavior (Scott & Bruce, 1994). Specialization was found to have a strong impact on technological innovations (Damanpour, 1987) and innovations in general (Damanpour, 1991). However, specialization in Damanpour's research studies is an organizational structure factor that represents different specialists who use different technologies and are specialized in different areas (Damanpour, 1987). Specialization as a work characteristic factor reflects "the extent to which a job involves performing specialized tasks or possessing specialized knowledge and skill" (Morgeson & Humphrey, 2006, p.1324). Indeed, both share the component of specialization in a specific area where one is an expert in a specific area. Feedback was also found to increase creativity (Zhou, 2003). Several researchers have suggested that innovation is fostered when an

employee is given a considerable degree of freedom or autonomy (Amabile, 1996a; Amabile et al., 1996; Amabile & Gryskiewicz, 1987). In addition, employees who have more autonomous and broader roles and who are more confident in performing their work activities outside their technical job are most likely to make suggestions (Axtell et al., 2000). Therefore it is likely to assume that job identity and job autonomy will predict innovative behavior.

H4.1: Task characteristics of autonomy, task identity, task significance, task variety and feedback from job will relate positively to innovative behavior.

H4.2: Knowledge characteristics of complexity, information processing, specialization, problem solving and skill variety will relate positively to innovative behavior.

Innovative Behavior and Personal Initiative

Proactivity is a self-started and change-oriented behavior that one uses to improve personal or organizational effectiveness (Unsworth & Parker, 2003). Personal initiative (PI) is a form of proactivity that is defined as "a behavior syndrome resulting in an individual's taking an active and self-starting approach to work and going beyond what is formally required in a given job", (Frese, Kring, Soose, & Zempel, 1996, p.38; see also Frese, Fay, Hilburger, Leng and Tag, 1997). Though previous research examined the relationship between personal initiative and work-unit innovativeness (Hakanen, Perhoniemi, & Toppinen-Tanner, 2008), and between initiative as a climate factor and innovation (Baer & Frese, 2003), no published study examined the link between PI as an antecedent to innovative behavior. The application component of innovative behavior is mainly about creating, testing and commercializing an innovative idea (Kanter, 1988; De Jong & Kemp, 2003). Crant (2000) defined proactive behavior as "taking initiative in improving current circumstances or creating new ones; it involves challenging the status quo rather than passively adapting to present conditions" (p.436). Proactive people don't wait for opportunities to come to them; they search for it (Crant, 2000). Proactive personality was found to be related to organizational practices and innovations (Parker, 1998) and to intentions to start a business (Crant, 1996). In addition, company presidents with proactive personalities were found to be related to changes in sales and company posture (Becherer & Maurer, 1999). Innovative behavior includes initiating new ideas or changes in administrative procedures that aims at improving work relations or the application of new ideas or technologies to work processes aiming at enhancing the effectiveness of work (Kleysen

& Street, 2001; Kanter 1988) which requires a proactive behavior to be accomplished. Finally, PI's self-starting aspect involves strategies and goals development that are unique and unusual and developed by employees whose role does not include doing so (Fay & Frese, 2001; Frese et al., 2007; Sonnentag, 2003; Unsworth & Parker, 2003). Therefore, it is likely to assume that PI will have a direct positive effect on innovative behavior since employees who are high in PI are more likely to face obstacles and achieve their unusual objectives and goals.

H5: Personal initiative relates positively to innovative behavior.

Innovative Behavior and Supportive climate

In addition to what a person possesses to be creative like technical skills or creative thinking, he or she will not be able to motivate if the organization did not support them with all tools like sufficient time, funds allocated to work domain, material resources, relevant information and training (Amabile, 1996a). Psychological climate is defined as a "set of perceptions that reflect how work environments, including organizational attributes, are cognitively appraised and represented in terms of their meaning to and significance for individuals" (James, Joyce, & Slocum, 1988, p.129). Perceived organizational support (POS) was found to be related to in-role performance and extra-role performance (Byrne & Hochwarter, 2007), partially mediated the effect of intrinsically satisfying job conditions on organizational affective commitment and fully mediated the effect of extrinsically satisfying job conditions on organizational affective commitment (Stinglhamber & Vandenberghe, 2003). Supportive climate was also found to predict satisfaction and commitment (Luthans et al., 2008). In addition, individuals who experienced greater team leader support, and support from management for innovation were those who reported that more of their suggestions were put into practice (Axtell et al., 2000). Support for innovation and climate perceptions were also found to predict innovative behavior (Scott & Bruce, 1994). Therefore, an employee is more likely to come up with new ideas and work on implementing it if he/she feels that the organization will support in its implementation.

H6: Supportive climate relates positively to innovative behavior.

Innovative Behavior and Strategic Attention

Goals orientations are likely to increase intrinsic motivation (Harrison et al., 2006). A company should pay enough attention to innovation if it seeks to innovate (De Jong & Kemp, 2003) whereby involving employees and front line experts is crucial for the success of innovations (De Brentani, 1991, 2001). A vision directed towards innovation help employees know where the company is heading to and what are the values that are most wanted in the organization (De Jong & Kemp, 2003). A company would not survive in the market unless it provides customers with greater value or comparable value at lower prices or both (Porter, 1996). However, success of achieving such strategic direction is determinant on human resources practices and whether the company achieves alignment between its strategic direction and its human resources practices or not (Youndt, Snell, Dean, Jr., & Lepak, 1996). Product and service development studies showed that paying attention to innovation is tied to improved performance (De Jong & Kemp, 2003). Therefore paying attention to innovation and having a mission and vision that emphasizes innovation should lead to employees implementing new innovations whether ideas or improvements to current services and products. Hence, strategic attention is likely to affect innovative behavior.

H7: Strategic attention relates positively to innovative behavior

Mediation Effects

Finally, we argue that innovative behavior mediates the relationship between the six antecedents of creative performance, PsyCap, work characteristics, PI, supportive climate, and strategic attention and the outcomes of engagement and satisfaction. That is, these antecedents influence engagement and satisfaction through innovative behavior. Previous research showed significant relationships between PsyCap and engagement (Avey et al., 2008) and satisfaction (Luthans & Youssef, 2007; Luthans et al., 2007b; Luthans et al., 2008) and between PsyCap and creative performance (Sweetman et al., 2011). However, no research examined the mediating effect of creativity or innovation on the relationship between PsyCap and satisfaction or engagement. Based on the suggested linkages highlighted above we suggest that the relationship between PsyCap and both satisfaction and engagement is mediated by innovative behavior. Further, positive relationships between work characteristics and engagement (Dikkers, Jansen, Lange, Vinkenbunrg, & Kooij, 2010) and satisfaction (Oldham & Hackman, 1976) were also found. Supportive climate was also found to be related to engagement (Rich et al., 2010) and satisfaction (Luthans et al., 2008).

Proactivity was also found to be related to engagement (Jansen et al., 2010). Therefore, it is likely to assume that the relationship between the antecedents of innovative behavior and engagement and satisfaction is mediated by innovative behavior.

H8.1: The relationship between creative behavior and engagement and satisfaction is mediated by innovative behavior.

H8.2: The relationship between PsyCap and engagement and satisfaction is mediated by innovative behavior.

H8.3: The relationship between work characteristics and engagement and satisfaction is mediated by innovative behavior.

H8.4: The relationship between PI and engagement and satisfaction is mediated by innovative behavior.

H8.5: The relationship between supportive climate and engagement and satisfaction is mediated by innovative behavior.

H8.6: The relationship between strategic attention and engagement and satisfaction is mediated by innovative behavior.

Methodology

Sample

Participants in the study are Egyptian professionals from a variety of job types in different companies were approached by email or through the phone to be able to distribute the survey. The survey was also provided via an online portal to facilitate the process of data gathering. The survey was sent to or handed in to 250 employees who agreed to take the survey, however only 120 filled the surveys and sent them back which make the response rate 48%. Sixty one percent of the sample were females, 38% were males while 9% did not report their gender with an average of 30 years old and an average years of experience of 7. Around 19% came from human resources management department, 9% from marketing, 15% from finance, 10% from audit, 9% from quality, 9% from sales, and finally 42% from other departments like information technology, consultancy and teaching. So jobs were diversified and

classified under different sectors which is essential for research on work characteristics (see Morgeson & Humphrey, 2006). Forty two of participants hold a bachelor degree while 23% hold a masters degree and 2% holds a PHD. As for the career level, 26% were from an entry level, 60% from middle level and 6% from top level.

Measures

All instruments used in this field study are published and standardized measures. Participants will be asked to indicate the extent to which they agree to the statements. All measures will use a response scale in which 1 is "strongly disagree" and 6 is "strongly agree".

Psychological capital

Positive psychological capital will be measured using the PsyCap questionnaire. The PsyCap questionnaire was developed by Luthans and colleagues (2007b). Results of their study provided psychometric support for a new PsyCap survey designed to assess the four facets or constructs, as well as a composite factor. Researchers (Luthans et al., 2007b) have selected the four scales for each of the four positive constructs based on certain selection criteria. That is, the scale is reliable and valid, applicable to the workplace, and is capable of measuring the state-like capacities that make up the PsyCap. According to the above-mentioned criteria, the scales that are used are (1) hope (Snyder et al., 1996), (2) resilience by Wagnild & Young (see Luthans et al., 2007b), (3) optimism (Scheier & Carver, 1985), and (4) self-efficacy (Parker, 1998). The researchers selected the best six items from each scale and so reached agreement on the 24 items that make up the PsyCap questionnaire.

The Cronbach alphas across studies on PsyCap conducted by Luthans et al (2007) show support for the reliability of each of the four facets and for the overall PsyCap as follows: hope (.72-.80), optimism (.69-.79), self-efficacy (.75-.85), resilience (.66-.72), and PsyCap (.88-.89). Sample items included: (a) self-efficacy: "I feel confident analyzing a long-term problem to find a solution" and " I feel confident helping to set targets/goals in my work area", (b) hope: "I can think of many ways to reach my current work goals" and "There are lots of ways around any problem", (c) resilience: "I usually take stressful things at work in stride" and "I feel I can handle many things at a time at this job", (d) optimism: "If something can go wrong for me

work-wise, it will" and "I always look on the bright side of things regarding my job". For the current study, the Cronbach alphas were as follows: hope (.66), optimism (.60), self-efficacy (.80), resilience (.56), and PsyCap (.688) after items deletion. Reliability coefficients around .90 are considered to be "excellent", values approximately .80 as "very good", and values around .70 as "adequate" (Pallant, 2007). To increase the reliability of the hope scale two items that showed negative or very low intercorrelations were deleted. The Cronbach alpha for the new hope scale increased to .73. For resilience, two items were deleted where the Cronbach alpha then increase to .64. For optimism, Cronbach alpha increased to .77 after deletion of the reversed items that has negative correlations with other items.

Work Characteristics

Work characteristics were measured using the Work Design Questionnaire (WDQ) by Morgeson & Humphrey (2006) where only task characteristics and knowledge characteristics were used. Sample items are for example, "The job allows me to make my own decisions about how to schedule my work" (work scheduling autonomy), "The job provides me a chance to completely finish the pieces of work I begin" (task identity), "The job itself provides feedback on my performance" (feedback from job), and "The job requires that I engage in a large amount of thinking" (information processing). Cronbach alpha for work characteristics dimensions were as follows: autonomy (.90), task variety (.80), task significance (.83), task identity (.83), feedback (.82), information processing (.88), problem solving (.73), skill variety (.88), specialization (.80), and job complexity (.84).

Engagement

Engagement was measured using the survey by Rich and colleagues (2010). Sample items included "I exert my full effort to my job" (physical engagement), "I am enthusiastic in my job" (emotional engagement), and "At work, I focus a great deal of attention on my job" (cognitive engagement). Internal consistency for engagement was .72.

Personal Initiative

Personal initiative was measured with a seven-item scale from Frese and colleagues (1997). This measure was also used in other studies (e.g., Ohly, Sonnentag,

& Pluntke, 2006; Sonnentag, 2003). Sample items included “I actively attack problems” and “I take initiative immediately even when other don’t”. Cronbach alpha for PI was .85.

Innovative Behavior

Innovative behavior was measured using the questionnaire by Ohly, Sonnentag, & Pluntke (2006) that is based on Zhou & George (2001) creativity rating. Sample items are “I often implement my new and innovative ideas” and “I implement new ways to achieve goals or objectives”. Cronbach alpha for innovative behavior was .84.

Creativity

Creativity was measured using the creativity questionnaire by Tierney et al., (1999). Items include “I generate ideas revolutionary to our field”. The item “I tried out new ideas and approaches to problems” was omitted because it targets the implementation of ideas and so might overlap with innovation (see Ohly et al., 2006). Cronbach alpha for creative behavior was .81.

Strategic attention

Strategic attention was determined with eight items inspired by the work of Buntingham and West (1995) and developed by and used in a study by Jong and Kemp (2003). Items included “my company always strives to deliver the “newest” and “hottest” services to its customers” and “my company is willing to finance innovative activities”. Cronbach alpha in the current study was .93.

Supportive climate

Supportive Climate was measured with an eight item scale based on Anderson and West (1998). Sample items included “people in my work always look for fresh, new ways of looking at problems” and “people in my work are open and responsive to change”. Cronbach alpha in the current study was .90.

Satisfaction

Job satisfaction was measured using the job satisfaction scale by Brayfield and Rothe (1951). Sample item include “Most days I am enthusiastic about my work” and “I feel fairly satisfied with my present job”. Cronbach alpha was .44 which is very low

so we had to delete the two reversed items as they showed negative inter-correlations with other items. Cronbach alpha increased to .75 after deleting the two items and so we formed a new scale for satisfaction that did not include the two items.

Control variables were additionally measured to account for influences of third variables as previous research showed that job experience, education, and gender are related to creative and proactive outcomes (Scott & Bruce, 1994; Sonnentag, 2003; Tierney et al., 1999). These control variables included age, gender (female or male), career level, years of experience and educational level.

Results

Correlational Analyses

As shown in table 1, the correlational analysis provides support for all hypotheses. Innovative behavior was found to relate positively to the two suggested outcomes of satisfaction ($r = .43$) and engagement ($r = .54$). Creative behavior was found to relate positively to innovative behavior ($r = .56$). PsyCap as a core construct as well as its four components were found to relate positively to innovative behavior. Further, a comparison of the correlation coefficients of PsyCap and its four components indicates that hope bears the strongest relationship to innovative behavior with $r = .56$, as compared to self-efficacy ($r = .46$), resilience ($r = .19$), optimism ($r = .20$) and PsyCap ($r = .50$). As for work characteristics, positive significant relationships were found between task characteristics and innovative behavior ($r = .54$) and between knowledge characteristics and innovative behavior ($r = .41$). As shown, a positive significant relationship ($r = .54$) was noted between personal initiative and innovative behavior. That is, the higher the employees' personal initiative, the higher their innovative behavior will be. Significant positive relationships were also noted between supportive climate and innovative behavior ($r = .32$) and between strategic attention and innovative behavior ($r = .30$). Finally, as seen in table 1.1, innovative behavior was found to be positively related to all work characteristics with the exception of work complexity, it was found to negatively related to it.

Table 1. Intercorrelations of the main study variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1 Years of experience	1																			
2 Department	.142	1																		
3 Gender	.089	-.100	1																	
4 Educational degree	.468	.144	.151	1																
5 Age	.991	.180	.012	.412	1															
6 Career level	.250	.239	.002	.309	.230	1														
7 PsyCap	.000	.051	-.007	.018	-.016	.140	1													
8 Optimism	-.136	-.047	-.047	-.108	-.138	-.103	.584	1												
9 Self-efficacy	.131	.088	.003	.217	.113	.169	.822	.214	1											
10 Hope	-.138	.073	.075	-.060	-.148	.188	.742	.268	.517	1										
11 Resilience	.071	-.083	-.056	-.097	.059	.115	.741	.349	.463	.412	1									
12 Creativity	.002	-.007	-.207	-.244	.007	.082	.571	.361	.392	.590	.348	1								
13 Work characteristics	.023	.217	-.083	.037	.014	.143	.591	.278	.516	.446	.421	.452	1							
14 Supportive climate	-.027	-.037	-.182	.084	-.034	.175	.385	.224	.254	.362	.308	.421	.461	1						
15 Strategic attention	-.015	.077	-.146	-.098	-.012	.132	.471	.299	.377	.386	.303	.448	.465	.631	1					
16 Personal initiative	.036	-.021	-.087	-.170	.032	.114	.690	.386	.553	.557	.506	.543	.470	.325	.315	1				
17 Innovative behavior	-.188	.010	-.168	-.015	-.188	-.013	.507	.200	.469	.568	.199	.566	.612	.326	.301	.545	1			
18 Satisfaction	-.029	.092	-.109	.047	-.026	.015	.219	.143	.162	.359	-.023	.377	.406	.504	.489	.137	.435	1		
19 Engagement	-.117	.165	-.106	.091	-.114	.069	.399	.240	.327	.448	.140	.343	.557	.286	.281	.465	.545	.645	1	

Note. $N = 108$; $r > .04$, $p < .10$; $r > .12$, $p < .05$; $r > .16$, $p < .01$; $r > .20$, $p < .001$

Table 1.1 Correlations of work characteristics

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Autonomy	1												
2 Task variety	.490	1											
3 Task significance	.508	.455	1										
4 Task identity	.564	.568	.553	1									
5 Task feedback	.507	.402	.479	.625	1								
6 Information processing	.303	.371	.312	.354	.299	1							
7 Problem solving	.461	.433	.519	.400	.313	.529	1						
8 Skill variety	.372	.389	.483	.376	.402	.478	.655	1					
9 Specialization	.287	.266	.168	.296	.387	.508	.420	.473	1				
10 Innovative Behavior	.512	.475	.453	.359	.277	.411	.428	.363	.328	1			
11 Task characteristics	.917	.689	.711	.770	.685	.391	.540	.482	.338	.544	1		
12 Complexity	-.109	.011	-.231	-.104	-.174	.139	-.145	-.056	-.084	-.204	-.142	1	
13 Knowledge characteristics	.358	.421	.329	.369	.344	.801	.708	.749	.678	.410	.445	.348	1
14 Work characteristics	.822	.678	.649	.724	.656	.620	.695	.665	.529	.612	.923	.046	.755

Note. $N = 108$; $r > .04, p < .10$; $r > .12, p < .05$; $r > .16, p < .01$; $r > .20, p < .001$

Regression Analysis

Hypothesis 1 was that employees' level of innovative behavior would be positively related to their satisfaction and engagement. For these analyses we used hierarchical regression where the covariates of age, educational level and gender were entered into step 1 and innovative behavior was entered in step 2. The purpose was to see the independent effects of innovative behavior on both satisfaction and engagement. As seen in table 2, when entering innovative behavior into the regression model, it predicted significant variance beyond the covariates. In both cases, the model in step 2 shows innovative behavior related positively with engagement ($\beta = .52, p < 0.001$) and satisfaction ($\beta = .42, p < 0.001$). Therefore, there was full support for Hypothesis 1. Hypotheses 2 till 7 predicted a positive relationship between creative behavior, PsyCap and its components, work characteristics, personal initiative, strategic attention and supportive climates as antecedents to innovative behavior and innovative behavior. As shown in table 3, creative behavior predicted innovative behavior ($\beta = .56, p < 0.001, R^2 = .32$), satisfaction ($\beta = .37, p < 0.001, R^2 = .14$), and engagement ($\beta = .34, p < 0.001, R^2 = .11$) whereby relationships with satisfaction and engagement were tested for mediation model purposes that will be explained later. Therefore, hypothesis 2 that is creative behavior predicts innovative behavior is supported.

As evident in table 3, PsyCap as well as its four components predicted innovative behavior whereby hope ($\beta = .56, p < 0.001, R^2 = .32$) explained the greatest variance in innovative behavior. Therefore, hypotheses 3.1 and 3.2 that PsyCap as well as its four components of hope, optimism, PsyCap, and resilience predicts innovative behavior is supported. Further, relationships between PsyCap and its four components with satisfaction and engagement were also examined for the purpose of testing for the mediation effect of innovative behavior later on. As can be seen in table 3, only hope and PsyCap showed significant relationships with satisfaction while for engagement, PsyCap and its components except for resiliency were found to be related to engagement.

Table 2. Regression Analyses with Covariates

	Job Satisfaction		Engagement	
	Step 1	Step 2	Step 1	Step 2
	β	β	β	β
Age	-.06	.038	-.19	-.06
Gender	-.12	-.044	-.13	-.03
Educational Level	.091	.045	.18	.13
Innovative Behavior		.43***		.52***
Change R^2		.17***		.25***

$p > 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

As for hypotheses 4.1 and 4.2, significant positive relationship was found between work characteristics and innovative behavior ($\beta = .61, p < 0.001, R^2 = .37$) which provides preliminary support that work design dimensions of task and knowledge characteristics relates positively to innovative behavior. However, in separate models, hypotheses 4.1 and 4.2 were fully supported where 26% of the variance in innovative behavior was explained by autonomy, 22% by task variety, 20% by task significance, 12% by task identity, and 7% by job feedback. Moreover, 16% of the variance in innovative behavior was explained by information processing, 18% by problem solving, 4% by complexity, 13% by skill variety, and 10% by specialization. Hypothesis 5 was supported where personal initiative predicted innovative behavior ($\beta = .54, p < 0.001, R^2 = .29$).

Table 3. Regression Analyses: PsyCap and Creativity and Life Satisfaction

	Innovative Behavior	Satisfaction	Engagement
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	β	R^2	β	R^2	β	R^2
Creative Behavior	.56***	.32***	.37***	.14***	.34***	.11***
Optimism	.20*	.04*	.14	.02	.24*	.05*
Hope	.56***	.32***	.35***	.12***	.44***	.20***
Self-efficacy	.46***	.22***	.16	.02	.32**	.10**
Resilience	.19*	.04*	-.02	.001	.14	.02
PsyCap	.50***	.25***	.21*	.04*	.39***	.16***
Work characteristics	.61***	.37***	.40***	.16***	.55***	.31***
Personal Initiative	.54***	.29***	.13	.01	.46***	.21***
Supportive Climate	.32**	.10**	.50***	.25***	.28*	.08*
Strategic Attention	.30**	.09**	.48***	.23***	.28*	.07*

$p > 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Hypothesis 6 was also supported where supportive climate was found to predict innovative behavior ($\beta = .32, p < 0.001, R^2 = .10$). Finally, hypothesis 7 was supported where positive relationships were found between strategic attention and innovative behavior ($\beta = .30, p < 0.001, R^2 = .09$). As for satisfaction and engagement, PI was not related to satisfaction but related to engagement while strategic attention and supportive climate were found to be positively related to engagement and satisfaction.

Further Analysis

A hierarchical regression model was created where innovative behavior was regressed on all proposed antecedents based on the beta values given in table 3 where work characteristics was entered after covariates then creative behavior and hope followed it. So in step 2, work characteristics was entered to test the additional variance in innovative behavior that could be explained by work characteristics. Then creative behavior was entered in step 3. As shown in table 4, 36% ($p < .0001$) of the variance in task performance could be explained by work characteristics in model 2 while in model 3 creative behaviors added an additional 13%. However, hope and personal initiative were not found to explain any additional variance in the models 4 and 5. The five models are shown in table 4. All 9 models built were significant. However, in the last model were all antecedents were entered; only work characteristics, personal initiative, creative behavior and hope along with the covariate of educational degree accounted for the variance in innovative behavior. Therefore, we can conclude from this model that work characteristics, creative behavior, hope and personal initiative are the strongest antecedents of innovative behavior. Finally, since creative behavior and hope showed the same beta values in table 3, we repeated the same models but with hope preceding creative behavior, however the same results were found were hope did not add significant variance in model 4. Finally, it is worth mentioning that another model was built where all covariates were entered in step 1 and then all antecedents were entered in step 2 whereby the only variables that showed significant positive relationships to innovative behavior were years of experience, educational degree, age, optimism, creativity, autonomy, complexity and personal initiative. Job autonomy was the strongest predictor.

Finally, regressions were performed to assess whether innovative behavior mediates the relationship between its antecedents and engagement and satisfaction. Following the guidelines of Baron and Kenny (1986), this analysis requires to assess whether the predictor variables (antecedents) predicts the outcome variables (satisfaction and engagement). Second, the predictor variables need to predict the mediator (innovative behavior). Third, the mediator must predict the outcome variable. Finally, if there is a mediator effect, the regression coefficient of the predictor on the outcome should decrease when controlling for the mediator. A significant positive relationship emerged between all antecedents and life satisfaction except for optimism,

self-efficacy, resilience and PI. PsyCap was found to predict satisfaction and so we included PsyCap as a higher order and ignored the four components and also PI. Innovative behavior was found to predict satisfaction ($\beta = .43, p < .0001$). Finally, when controlling for innovative behavior, the regression coefficient for PsyCap it decrease from .21 to -.002 and became non-significant and the Sobel test of partial mediation was significant ($z = 3.76, p < .0001$). For creative behavior it decreased from .37 to .19 and the Sobel test of partial mediation was significant ($z = 2.76, p < .01$).

As for work characteristics, it decreases from .40 to .22 and the Sobel test of partial mediation was significant ($z = 2.61, p < .01$). For supportive climate, it decreased from .50 to .40 and the Sobel test of partial mediation was significant ($z = 2.7, p < .01$). For strategic attention, it decreased from .48 to .39 and the Sobel test of partial mediation was significant ($z = 2.44, p < .05$). Therefore we can conclude that innovative behavior partially mediates the relationship between work characteristics, creative behavior, PsyCap, supportive climate, and strategic attention and satisfaction as an outcome. As for engagement, all antecedent variables including PsyCap were found to predict engagement except for resiliency. All antecedents were also found to predict innovative behavior (see table 3). Innovative behavior was also found to predict engagement. Finally, when controlling for innovative behavior, the regression coefficient for PsyCap decreased from .39 to .166 and became non-significant, and the Sobel test was significant ($z = 3.84, p < .0001$). For creative behavior, it decreased from .34 to .05 and became non-significant where the Sobel test was significant ($z = 4.1, p < .0001$). For work characteristics, it decreases form .55 to .28 and the Sobel test was significant ($z = 3.14, p < .001$). For personal initiative, it decreased from .46 to .23 and the Sobel test was significant ($z = 3.67, p < .0001$). For strategic attention it decreased from .28 to .12 and became non-significant where the Sobel test was significant ($z = 2.94, p < .01$). For supportive climate it decreased from .28 to .12 and became non-significant where the Sobel test was significant ($z = 3.11, p < .01$).

Table 4. Regression Analyses: Innovative behavior antecedents with covariates

Innovative behavior

	Step 1	Step 2	Step 3	Step 4	Step 5
	β	β	β	β	β
Age	-.91	-.055	.83	.516	.41
Gender	-.23	-.117	.011	-.065	-.07
Educational level	.065	.10	.308	.260*	.26
Years of experience	.71	-.16	-1.18	-.64	-.64
Career level	.001	-.77	-.112	-.15	-.15
Work characteristics		.614***	.42***	.42***	.42***
Creative behavior			.45***	.33**	.33**
Hope				.23	.31*
Personal initiative					-.139
Change R^2	.077	.36***	.13***	.02	.007

Discussion

This study is the first attempt to examine the relationship between innovative behavior and engagement and satisfaction. It is also the first to examine PsyCap and the constructs of hope, resilience, optimism, and self-efficacy as predictors for innovative behavior. This study examined relationships between innovative behavior and positive outcomes of engagement and satisfaction as well as the antecedents of innovative behavior. Results revealed that innovative behavior is positively associated with engagement and satisfaction. As predicted, all antecedents were found to predict innovative behavior where work characteristics were found to be the greatest predictor and autonomy was found to be the strongest predictor among all work characteristics. However, contrary to our expectations, job complexity was found to be negatively related to innovative behavior. That is, the more complex the job is, the lower the innovative behavior. The results showed that understanding innovative behavior should

be from multiple perspectives, a motivational perspective where we examined work design and PsyCap, an organizational perspective where we examined how employees perceive the support of their organizations and how they are alert about the strategic direction of the organization, and finally a creative perspective where we examined both creative behavior and PI as a first step to innovative behavior.

As mentioned, contrary to expectations, we found a significant yet negative effect of job complexity on innovative behavior. One possible explanation is the type of industry or work examined in the current study. Some jobs when are complex tend to cause de-motivation for employees so they are not likely to innovate. Though job complexity was found to be related to creative and innovative outcomes (Oldham & Cummings, 1996; Tierney & Farmer, 2002), routinization, which is sometimes seen as the opposite of complexity was also found to increase creative and proactive outcomes (Ohly et al., 2006).

Though previous research showed that engagement predicted innovative behavior, no research examined whether innovative behavior predicted engagement. The finding of this study is unique and is a major contribution to research in innovation and positive psychology. Since engagement is a core positive psychology topic (Seligman 2002a, 2002b), it is essential to know what are its antecedents and how to develop it. This also adds to the research on creativity and flow and the argument by Csikszentmihalyi (1997, 2002) that creative achievements lead to a happier and meaningful life. Though creativity and engagement are two major topics in positive psychology, the link between them was not emphasized on. Besides, research on innovation lack the impact of innovations on other psychological aspects of employees that could in turn increase the overall performance of the organization (see Rich et al., 2010).

This study also adds to several fields by focusing on antecedents from different aspects. On the psychological level, the current study is the first to examine the link between PsyCap and innovative behavior. The current findings are consistent with the findings by Sweetman and colleagues (2011) where PsyCap was found to predict creative performance. For optimism, the finding is in line with what Seligman (2006) proposed that optimists tend to be imaginative and come up with new ideas as they are visionary. For hope, the findings are in line with research on goals and their importance

in actions (Frese & Zapf, 1994). For self-efficacy, though no research examined self-efficacy and innovative behavior before, the current finding goes in line with the study by Tierney and Farmer (2002) that showed that there is a positive relationship between creative self-efficacy and creative performance. Self-efficient employees are more confident about the task in hand (Barron & Harrington, 1981) and so are more likely to take risks and innovate new ideas. Finally, the innovation of a new product or service indeed requires many trial and errors where an employee or a group of employees face many challenges and problems. Therefore, the ability to bounce back or resiliency is needed. The current finding goes in line with the argument by Amabile (1996a) that creativity needs persistence in the face of challenges.

On the psychological or creative related aspect and as expected, PI and creative behavior were found to predict innovative behavior. The finding was expected and is in line with other research studies of creative behavior (Amabile, 1988; Madjar, Oldham, & Pratt, 2002) and PI (Baer & Frese, 2003; Hakanen et al., 2008). The current study offers theoretical contribution that scholars argued is needed (Rank et al., 2004). That is, studying the antecedent of innovative behavior. The current study also is the first to assess innovative behavior in an Arab country. Little attention has been devoted to international and cultural issues related to creativity and innovation. Though individualistic culture is more likely to influence innovation and creativity, the current study also provides support that collectivistic cultures could also influence innovation. Collectivistic cultures, where Egypt is considered to be one, are those whose individuals are "integrated into strong, cohesive ingroups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty" (Hofstede, 1998, p. 26).

Supportive climate for innovation was found to predict innovative behavior. This finding is consistent with the study by De Jong and Kemp (2003). This finding supports the expectation s products. Finally, strategic attention finding is also in line with the study by De Jong and Kemp (2003) which suggests that the degree to which the organization is aligned with innovation in its strategic direction would be reflected on the degree to which employees would innovate. This finding adds to the theory on innovative behavior and also has its implication on strategic management and Porter's theory of strategy (Porter, 1991, 1996) and how a firm could affect a competitive edge through human resources practices. Our finding suggests that the degree to which the

employees are attentive to the innovation strategy of the organization determines whether they will implement new ideas for products and services or not.

Implications, Limitations and Future research

Finally, our findings extend the literature on innovative behavior and add to the practical field in several ways. First, this study is the first to combine PsyCap with innovative behavior. The results suggest that positivity at the workplace promotes innovation which brings together the two fields of positive psychology or POB and innovation. Though optimism and creative self-efficacy were found to predict innovative behavior of students (Li & Wu, 2011), research on positive constructs like optimism, hope or happiness in relationship to innovation at the organizational level has been rare. Future research should start paying more attention to positive constructs in relationship to more strategic or innovation management constructs. Though we did not measure innovation, we measure the implementation of new ideas and processes which will be reflected in innovation at the end of the day. Future research should then investigate the impact of positivity in the workplace on innovation process itself. For example, the link between creativity and flow has been highlighted (Csikszentmihalyi, 1997, 2002), however, research on flow and innovation at the organizational level has not been examined yet. This finding also has some practical implications for human resources whether in terms of training or recruitment. As highlighted by Seligman (2006), sales people who were recruited according to their level of optimism were more likely to get more sales and were better sales people where they were less likely to be frustrated from clients rejecting them and were more able to explain negative situations in terms of temporal, impersonal and specific explanations (see also Seligman 1995; 2002a). So if optimism could be measured and if it leads to more innovative behavior which in turn should lead to more innovations and so better overall performance, the human resource management should pay attention to such selection tools that include some positive psychological tests for optimism or other related constructs like hope, self-efficacy and resilience. These assessments could also be used to evaluate employees after being trained on relevant trainings related to these psychological capacities. Human resources management should also the performance to such capacities in a way that employees are encouraged to stay positive and spread positivity rather than negativity. The current study also added to positive psychology by examining innovative behavior as an antecedent to engagement, one very important

topic in positive psychology (see Seligman, 2002a, 2002b). Research that linked the implementation of new ideas and products to engagement has been rare. Though engagement in the current study was relevant to work, it still gives insight into the engagement of life in general and still work engagement is a very crucial topic in positive psychology. Finally, the study is the first to examine innovative behavior as a predictor to satisfaction where previous studies examined the impact of satisfaction on innovative behavior (Bysted, 2013; Han-Jen, 2014). These two findings also have important practical implication for human resources management people and also for consultancy firms. Engagement has been a main competency and main service for giant consultancy firm like Hay group where models of antecedents of engagement and satisfaction are built so as to determine what fosters engagement and decreases intentions to leave (see <http://www.haygroup.com/ww/>; see also Masson, Royal, Agnew, & Fine, 2008). Therefore, the current studies shed light in the importance of innovative behavior in building engagement models that aim at increasing satisfaction and engagement as well as decreasing intentions to leave and turnover.

Second, though previous research linked creativity to firm innovation (Amabile, 1996; Amabile, 1988; Madjar et al., 2002) and proactive personality to innovation and entrepreneurial activity (Parker, 1998; Crant, 1996), our study is unique in that it links creative behavior and PI to innovative behavior. Besides, organizational leaders and managers should pay attention to PI and creativity when building assessment centers for recruitment and also in employee development and training. Third, as highlighted above, the study contributes to the theory of strategy and innovation in that it links strategic attention which is about how employees think their company pays enough attention to innovation in its strategy, mission and vision. In Porter's strategy theories (see Porter, 1991; 1996), focus of organizations is on either innovation or cost or a combination of both. This study provides insight into the alignment between the organizations' strategic direction and how it could be implemented. If a company's main strategic direction is to innovate, then employees should see this in their mission, vision and strategy and be supported to do innovate so that innovations would occur at the end of the day. Finally, a company that seeks innovations should support its employees with all necessary tools to innovate.

As for work design, the current study adds to the job characteristics theories (Hackman & Oldham, 1980; Morgeson & Humphrey, 2006) by examining the role

work design plays in innovation or the implementations of innovative ideas. As discussed, job characteristics theory suggested that for positive outcomes like motivation, satisfaction and performance to occur, certain dimensions should be found in a job. These dimensions would result in certain states that in turn affect the outcomes. This study suggests that the way the work is designed would affect the employee's ability to innovate. However, like any study, the current study had limitations.

First, causal inferences that the antecedents of innovative behavior causes it and that it in turn causes engagement and satisfaction cannot be made. We depended on existing theory and prior research to describe and build a framework for our hypothesized relationships. However, the direction of the relationship cannot be determined without creating sequential precedence and experimental manipulations. In other words, the direction of the causality has not been established and the possibility of other alternative hypotheses (e.g., high engagement leads to high innovative behavior) cannot be ruled out.

In addition, common method variance within and between independent or dependent variables may lead to artificially high correlations (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Since some variables showed strong correlation, common method bias could have impacted the pattern of results. However, it is important to note that for the surveys that were handed in and not the online; the filing of the questionnaire was distributed in 2 different days which can potentially reduce the common method bias limitation. Further, to minimize common method bias, variables were measured on different levels of specification (Podsakoff et al., 2003). For example, work characteristics were assessed as stable features of jobs while creative and innovative behaviors as the general tendency to engage in the behavior.

Finally, the sample size in the current study is relatively small and specifically in relation to the variables included in the model. One reason for that might be the length of the questionnaire since it measured many variables. However, again we tried to solve this issue by dividing the questionnaire into two parts. One other reason is the unawareness of research importance in Egypt and the fact that companies are not willing to cooperate for research and are more concerned about confidentiality issues. Therefore, future research should focus on replicating the same model with larger sample.

To conclude, the current study not only suggests the seeming value of employees' psychological capital at all levels within organizations, but also other antecedents to innovative behavior as well as outcomes of engagement and satisfaction. The antecedents examined here provide a framework for investing in employees' capacities as well as company resources to be able to compete in the current turbulent environment.

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