A Self-determination Approach to Understanding Employees' Innovative Work Behavior

Mengchan GAO

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This is to certify that the thesis prepared

by: **Mengchan Gao**

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Signed by the final Examining Committee:

_____ Chair

Dr. Rucsandra Moldovan

_____ Examiner

Dr. Yu-Ping Chen

_____ Examiner

Dr. Tracy Hecht

_____ Supervisor

Dr. Alexandra Panaccio

Approved by:

_____

Chair of Department or Graduate Program Director

_____

Dean of Faculty

Date: _____

ABSTRACT

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Drawing on the insights from self-determination theory, this study explored the psychological mechanism of employees' innovative work behavior and examined whether this psychological mechanism is universal or cultural value specific. Specifically, I investigated how the three basic psychological needs influence employees' innovative work behavior, taking cultural values measured at the individual level into consideration. The current study was conducted at two large Chinese medical equipment and supply companies using survey methodology. A sample of 284 employees was obtained from both R&D and functional departments. Results showed that satisfaction of the three basic psychological needs are respectively positively related to employees' innovative work behavior. Second, a positive relationship between autonomous motivation and innovative work behavior was found. In addition, my empirical research also provided evidence that autonomous motivation partially mediates the relationship between satisfaction of the three basic psychological needs and innovative work behavior. In terms of the influences of individual cultural values, I found that power distance orientation negatively moderates the positive relationship between autonomous motivation and innovative work behavior. More specifically, the indirect effects of satisfaction of the three basic psychological needs on innovative work behavior through autonomous motivation are weakened when employees' power distance orientation is high. Implications for theory, research, and practice are discussed.

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INTRODUCTION

During the past ten years, owing to the challenges of globalization and knowledge-based competition pattern in enterprises, the competition in the market is much more fierce. In order to survive in the market, organizations not only have to keep up with customers' gradually increasing demands, but also need to compete with new competitors. Lyon and Ferrier (2002) pointed out that innovation is crucial for organization to remain competitive and successful, which is supported by empirical studies that show there is a positive relationship between innovation and firm performance (Darroch, 2005; Thornhill, 2006; Koellinger, 2008). As the most valuable resource in the organization, employees have played the most important role in helping to realize organizational innovation objectives and high firm performance (Darroch, 2005). To foster a high innovation rate within the organization, employees should be encouraged to conduct innovative work behavior (IWB) rather just focus on protecting the existing practice (Van de Ven, 1986). IWB is defined as an individual's behavior that aims to achieve the initiation and intentional introduction (within a work role, group, or an organization) of new and useful ideas, processes, products or procedures (Jong & Hartog, 2010). The creativity literature has bred the development of research on IWB, but IWB differs from employees' creativity—the production of new and useful ideas concerning products, services, processes and procedures (Amabile, 1988). IWB also includes the implementation of ideas, because IWB is intended to provide some benefits.

Recent literature on IWB suggests that employees' perceptions and organizational characteristics are helpful to engage employees in IWB. For example, employees' perceived organizational support, perceptions of HRM, person job fit, person-organization fit, organizational culture have been found to have influence on IWB (Ghulam, Irum, & Alia, 2015; Andre & Tanya, 2015; Afsar, Bilal, & Khan, 2015; Eskiler, Ekici, Soyer & Sari, 2016). However, the issue in recent research on IWB is that the majority of the studies focus on the organizational and job characteristics, while little attention has been paid to employees' psychological status. In

this research, I aim to investigate the psychological mechanism that facilitates employees' IWB. Self-determination theory (SDT), as a general theory of human motivation used in several domains, such as education, health, sports and organization, has been applied successfully to investigate and predict human behavior (Vansteenkiste, Niemiec, & Soenens, 2010). I believe that using this theory will enable us to get deeper understanding of employees' IWB.

In a recent study (Devloo, Anseel, De Beuckelaer, & Salanova, 2015), need satisfaction has been found to contribute to IWB through intrinsic motivation. However, their study only considered intrinsic motivation, while SDT would suggest that autonomous motivation, which encompasses intrinsic as well as identified regulation, would mediate such relationships. Besides, is the psychological mechanism of IWB universal? This study also omitted to account for individual differences, such as cultural values, which may play a role in the psychological process that lead to IWB. The reason to consider the cultural values is that the difference in terms of value of each cultures impact what is desirable or undesirable (Erez & Nouri, 2010). For instance, cultures that promote the values of collectivism, high power distance, uncertainty avoidance, and conformity to social norms may keep individuals from voicing their ideas and from deviating from the standards or the norms (Harzing & Hofstede, 1996; Westwood & Low, 2003). However, individuals in the cultures that emphasize the values of individualism, low power distance, and low uncertainty avoidance may be encouraged to express their ideas, show their uniqueness, and explore the creative ways of doing things (Erez & Nouri, 2010). The variation in values and behaviors across different cultures require us to consider IWB related issues from a cultural perspective. In order to examine the effects of specific cultures valuables that may intervene in this process, I conducted this research in China.

The Chinese context is chosen in the current study for several reasons. First, China is a fast developing country, especially in recent years. China is no longer the "factory of the world". There has been consensus that China must get into high value-added activities, and innovation is

the main force to make this transformation happen. Since 2014, Innovation has been treated as national policy (Leung, Chen, Zhou, & Lim, 2014). China has experienced great changes in terms of innovation and employees are encouraged to innovate, which provides with us a good context to study innovation behavior. Secondly, although the great innovation transformation is happening in China, China is still one of the most ancient civilizations in the world. For example, for a long time, Chinese culture has been influenced by the Confucianism, which emphasizes group orientation, interpersonal harmony, acceptance of authority and benevolence (Liem & Nie, 2008) but not autonomy in any explicit way. Hence, those cultural characteristics may probably influence the employees' psychological process of conducting IWB. As previous research shows there are individual differences in cultural values within cultural groups (Kirkman & Shapiro, 2001), I examine whether cultural values at the individual level play a role in the process leading to IWB among Chinese employees.

Thus, the main goal of this thesis is to address this critical research question: what is the psychological mechanism of employees' IWB, and is this psychological mechanism culturally specific?

The current study contributes to the literature mainly in two ways. Firstly, using the SDT framework, this study examines the relationship between satisfaction of the three basic psychological needs and employees' IWB, through the process of autonomous motivation. Secondly, considering the context, this study examines whether cultural values – namely collectivism, power distance, and uncertainty avoidance – measured at individual level, have moderating effects on the relationship between autonomous motivation and IWB. Figure 1 depicts the hypothesized relationships between the variables in this study.

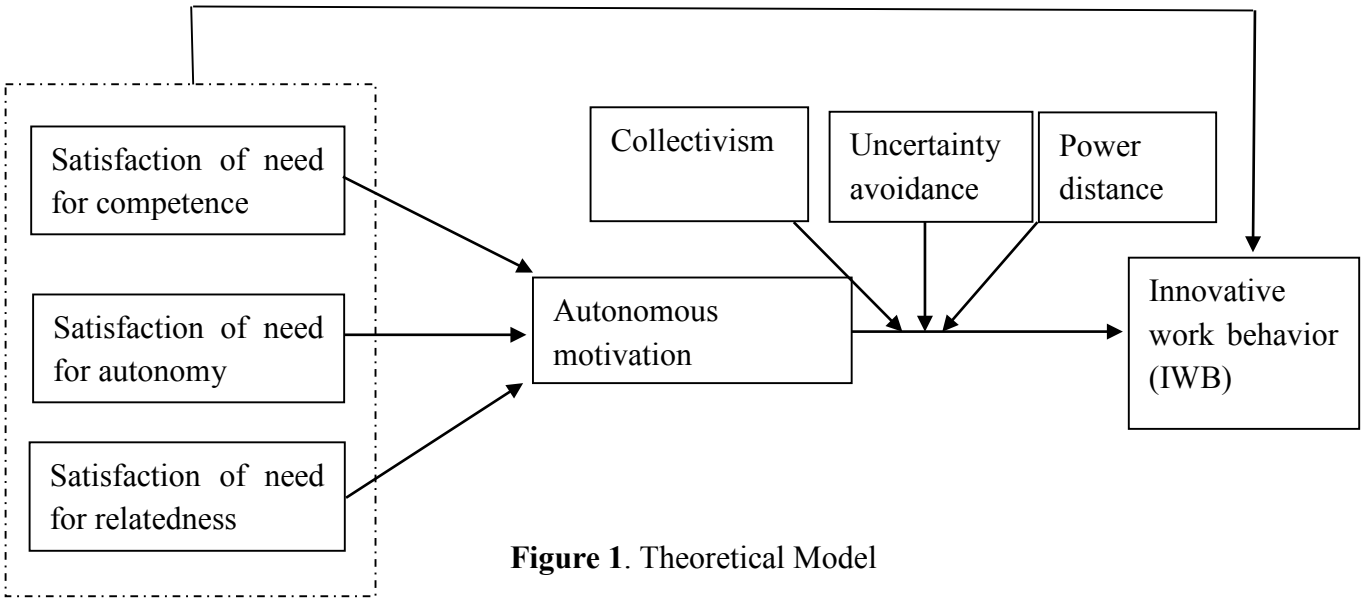

Figure 1. Theoretical Model

LITERATURE REVIEW AND HYPOTHESES

Innovative Work Behavior

Innovative Work Behavior (IWB) is defined as an individual's behavior that aims to achieve the initiation and intentional introduction (within a work role, group, or an organization) of new and useful ideas, processes, products or procedures. IWB differs from employees' creativity— the production of new and useful ideas concerning products, services, processes, and procedures (Jong & Hartog, 2010, p.24). As IWB is intended to provide some benefits, it also includes the implementation of ideas. For example, when an employee comes up with a creative idea, he or she also needs to promote this idea to the supervisor or colleagues for getting support. Through knowledge sharing and cooperation among people, the idea could be realized and systematically applied to the daily life. In other words, IWB brings new ideas, indicates changes, drives knowledge sharing, and benefits the problem-dealing process.

Based on the research of Jong & Hartog (2010), there are four distinct dimensions of innovative work behavior: idea exploration, idea generation, idea championing, and idea implementation. Idea exploration is related to the discovery of an opportunity or some problem arising and includes looking for a way to improve current products, services or processes or trying to think about them in alternative ways (Kantar, 1988; Farr & Ford, 1990). Idea generation is related to the creation of new products, services or processes, improvements in current work processes, or solutions to identified problems (Van de Ven, 1986; Amabile, 1988; Kanter, 1988). The key to idea generation appears to be the combination and reorganization of information and existing concepts to solve problems or to improve performance. The next stage after idea generation is idea championing which includes finding support and building coalitions by expressing enthusiasm and confidence about the success of the innovation, being persistent, and getting the right people involved (Howell, Shea, & Higgins, 2005, p. 642). Finally, ideas need to be implemented. Idea implementation includes making innovations part of the regular work

process (Kleysen & Street, 2001) and behaviors like developing new products or work processes, and testing and modifying them (Kanter, 1988).

Previous research on creativity has shown that autonomous motivation facilitates the individuals' engagement in creative activities (De Stobbeleir, Ashford, & Buyens, 2011; Amabile, Hill, Hennessey, & Tighe, 1994). Autonomously motivated individuals are more curious about their surroundings, which enable them to process the information deeply. Further, they have better cognitive flexibility, and high risk taking orientation (Grant & Berry, 2011; Ryan, 1995), all of which should be necessary when developing creative ideas. Because the creativity literature has bred the development of research on IWB, IWB has also been studied from an autonomous motivation perspective (Frese, Teng, & Wijnen, 1999; West, 2002).

Self-determination theory

Self-determination theory (SDT) is a general theory of human motivation. Researchers in several domains, such as education, health, sports, and organizations, have applied it successfully to investigate and predict human behavior (Vansteenkiste, Niemiec, & Soenens, 2010).

SDT differentiates amotivation (i.e., lack of motivation) from motivation. Amotivation means a lack of intention to act, whereas motivation involves intentionality (Gagné & Deci, 2005). Within motivation, autonomous motivation and controlled motivation are distinguished in SDT theory. Their differences lie in both the underlying regulatory processes and the accompanying experiences (Gagné & Deci, 2005). In contrast to controlled motivation which comes from a sense of pressure and enforcement, autonomous motivation results from one's interest in an activity itself (i.e., intrinsic motivation) and /or from one's internal integration of the value and regulation of the activity (i.e., identified extrinsic motivation) (Gagné & Deci, 2005).

Specifically, intrinsic motivation derives from the interest or enjoyment of doing the job itself (Gagné & Deci, 2005), rather than from occasional consequences such as external rewards (Amabile, 1993). It relates to individuals' positive experiences when doing a task, such as interest,

involvement, continuous curiosity, satisfaction or positive challenges (Amabile, 1993). Apart from intrinsic motivation, some types of extrinsic motivation could also be regarded as autonomous motivation, such as identified regulation and integrated regulation. With identified regulation, people have a feeling of freedom, because they believe that the behavior is meaningful to achieve personally valued outcomes. Moreover, with integrated regulation, people admit that the behavior is congruent with their sense of themselves (Gagné & Deci, 2005).

SDT's basic psychological needs and innovative work behavior

Self-determination theory postulates that the active processes of autonomous motivation for self-development and for psychological well-being need nutriments—both biological and psychological (Ryan, 1995). There are at least three basic psychological needs: the need for competence (i.e., need to feel effective in interacting with the environment), the need for autonomy (i.e., need to exercise control over one's actions), and the need for relatedness (i.e., need to feel connected with others).

The basic psychological need for competence is defined as individuals' inherent desire to feel effective in interacting with the environment (Ryan & Deci, 2000; White, 1959). It is prominent in the propensity to explore and manipulate the environment and to engage in challenging tasks to test and extend one's skills. Satisfying the basic psychological need for competence allows individuals to adapt to complex and changing environments, whereas competence frustration is likely to result in helplessness and a lack of motivation (Deci & Ryan, 2000; Van den Broeck et al, 2010). Satisfaction of the basic psychological need for autonomy refers to the experience of having choices, and of initiating actions oneself (Ryan & Deci, 2002). The basic psychological need for autonomy has been regarded as the most salient psychological nutriment for the development of autonomous motivation (Ryan & Deci, 2006; Humphrey, Nahrgang, & Morgeson, 2007). Studies have suggested that feelings of autonomy are expected to foster motivation, satisfaction, and performance in a variety of settings (Fried, Hollenbeck, Slowik,

Tiegs, & Ben-David, 1999; Troyer, Mueller, & Osinsky, 2000; Van Yperen & Hagedoorn, 2003). Satisfaction of the basic psychological need for relatedness is defined as individuals' inherent propensity to feel connected to others, to care for, to love and be cared for, be loved for by others, as well as to have a sense of belongings (Baumeister & Leary, 1995; Ryan & Deci, 2002).

Previous experiments support the argument that the feelings of being competent and having autonomy are crucial to maintain intrinsic motivation. Moreover, satisfaction of all the three basic psychological needs is necessary for autonomously extrinsic motivation (Gagné & Deci, 2005). More specifically, satisfaction of the basic psychological needs for relatedness and competence derives from a behavior facilitates the internalization of its values and regulation. In addition, satisfaction of the need for autonomy determines whether the internalization is identification or integration.

Building on the framework of SDT theory, I investigate the motivational impacts of satisfaction of the three basic psychological needs on individuals' IWB.

Linking competence need satisfaction to innovative work behavior

One source of innovation is a chance to improve conditions, or a threat requiring an immediate response. Generally, the implementation of IWB requires people to think about the problems or conditions in a creative way, to reorganize, and to combine the current resources, knowledge, and information to solve the problems or to improve performance. Employees who perceive their basic psychological need for competence as satisfied are more likely to reciprocate and respond more creatively to their situations due to high levels of commitment and satisfaction with their job (Hon & Rensvold, 2006; Kristof- Brown, Zimmerman, & Johnson, 2005).

Compared with routine activities, IWB involves difficulties, troubles and risks. Obstacles and setbacks during the process are unavoidable for employees. Satisfying the basic psychological need for competence makes employees more confident about their abilities, which motivates them to be persistent on what they want to achieve, whereas individuals who do not

believe in their abilities are reluctant to set and pursue challenging innovative goals. Prior research supports this view. The basic psychological need for competence is conceptually close to Bandura's (1986) concept of self-efficacy, which determines how environmental opportunities and impediments are perceived. Individuals with high self-efficacy usually strive to achieve their goals by making and maintaining an effort (Bandura, 1994, 1997). Self-efficacy has been commonly understood as task specific, which refers to an individual's perception of his or her ability to perform the actions specific to particular tasks (Scholz, Doña, Sud, Schwarzer, 2002). Some researchers also conceptualized a generalized sense of self-efficacy that refers to the global confidence in one's coping abilities across a wide range of demanding or novel situations (Schwarzer, 1992; Schwarzer, Bäßler, Kwiatek, Schröder, Zhang, 1997). Here, the self-efficacy refers to task specific self-efficacy. The literature on self-efficacy has also emphasized the positive impacts of the sense of competence on creative and innovative activities (e.g., Gong, Huang, & Farh, 2009; Michael, Hou, & Fan, 2011; Tierney & Farmer, 2002; Beghetto, Kaufman, & Baxter, 2011). I thus propose that satisfaction of the basic psychological need for competence is positively related to employees' IWB.

Hypothesis 1: Satisfaction of the basic psychological need for competence is positively related to employees' IWB.

Linking autonomy need satisfaction to innovative work behavior

In SDT theory, autonomy need satisfaction is regarded as a psychological necessity which determines the extent to which employees are willing to invest themselves in tasks and work roles (Gagne & Deci, 2005; Humphrey et al., 2007; Ryan & Deci, 2006). Among the three basic psychological needs, the need for autonomy is viewed as the most influential one in determining the degree of motivation. A substantial body of literature has demonstrated that in order to simulate the emergence of creative ideas, employees' feeling of autonomy is crucial (e.g., Bailyn, 1985; Amabile & Gryskiewicz, 1989; Oldham & Cummings, 1996). With the feeling of having

autonomy, employees free themselves from the rigid work rules and follow their novel thoughts (Amabile & Gryskiewicz, 1987). Moreover, since innovation involves trials, errors, and failures, feelings of having autonomy provide employees with an avenue to try out new ideas repeatedly with less fear of being punished or being judged, and with fewer restrictions of the daily work routines. Moreover, individuals whose need for autonomy is satisfied are more likely to engage in self-directed and self-started behavior (Strauss & Parker, 2014). They can set and strive for their proactive goals at their own pace (Devloo et al, 2015).

Past research has suggested that the positive perception of autonomy support from supervisor facilitates employees' good work performance. Following this logic, some researchers went deeper to study the effects of perceived autonomy support from a supervisor on specific work performance, such as innovation at work (Chen & Aryee, 2007; Jung, Chow, & Wu, 2003; Ramus & Steger, 2000). Results showed that when supervisors allow employees grater autonomy and decision latitude, employees report higher frequency of creative idea generation and implementation. Similarly, empirical evidence from previous work indicated that experiencing autonomy is positively related to idea suggestion efforts, voice behaviors and idea implementation activities, which is in accordance with the dimensions identified in IWB construct--idea exploration, idea generation, and idea implementation.

Hypothesis 2: Satisfaction of the basic psychological need for autonomy is positively related to employees' IWB.

Linking relatedness need satisfaction to innovative work behavior

Relatedness need satisfaction implies that employees feel connected to others and perceive the environment is supportive. Perception of relatedness support from supervisor and colleague has been studied in creativity literature. Results showed that the perceived relatedness support from supervisor and group members could help in harvesting idea generation and idea implementation behavior (Skerlavaj & Carlsen, 2016).

The reasons are that when people have creative ideas, and even those ideas involve some uncertainties, such as the trade-off between their benefits and costs of developing and implementing them, or resistance from the external environment, if they feel support from the environment in which they are embedded, they will be confident and persistent to make an innovative idea come true. Previous research also suggests that individuals who have feelings of relatedness do not fear conflicts, negative judgements, resistance and social isolation from their peers. In other words, they are psychologically safe when championing the immature innovative ideas (Eisenbeiss, van Knippenbery, & Boerner, 2008; Anderson & West, 1998). This logic could be explained through the mechanism of innovation trust. Innovation trust refers to a positive view and acceptance of innovation ideas by the co-workers, which motivates the idea championing within the workplace (Afsar, Badir, & Khan, 2015). Employees who perceive the atmosphere as open-minded and supportive, are confident when bringing up suggestions and introducing new ideas. In addition, they would have positive expectations on the responses from people in the environments (Ambrose & Schminke, 2003). Besides, a supportive working environment promotes the free flow of information and knowledge (Janssen et al., 2004). At the idea implementation stage in particular, innovation trust promotes the collaboration, knowledge sharing among peers. Many ideas fail because they are poorly implemented, and lack the support of co-workers.

Hence, satisfaction of the basic psychological need for relatedness should be positively related to IWB.

Hypothesis 3: Satisfaction of the basic psychological need for relatedness is positively related to employees' IWB.

To conclude, I believe that satisfying the three basic psychological needs should be positively related to employees' IWB.

The Mediating Role of Autonomous motivation

The research on innovation has considered autonomous motivation as a crucial factor for employees' innovative activities (Woodman, Sawyer, & Griffin, 1993). The positive effects of autonomous on IWB can be analyzed from the following aspects. Firstly, when employees perceive their work as valuable, meaningful and motivating, they tend to show more interests in their daily work, which motivates them to explore better ways of doing their jobs (Jung, Chow, & Wu, 2003). Secondly, autonomously motivated employees are more likely to transform their interests and motivation into high levels of effort, which is necessary for better job performance, especially for jobs requiring creativity, cognitive flexibility, and conceptual understanding (Kehr, 2004; Tu & Lu, 2012). Thirdly, employees who show high degrees of autonomous motivation are more goal oriented, particularly in face of challenges, difficulties and obstacles. They usually exhibit more patience and persistence compared with employees who are lack of autonomous motivation (Deci & Ryan, 2000; Strauss & Parker, 2014). Moreover, autonomously motivated employees are considered to be better at leveraging knowledge (Parker, Bindl, & Strauss, 2010). The flexible application of the accumulated knowledge enables them to be efficient in problem solving and in coming up with the non-traditional approach in the work.

Based on the analysis above, I propose that satisfaction of the three basic psychological needs should have positive influences on employees' IWB. Meanwhile, autonomous motivation will play a mediating role between satisfaction of the three basic psychological needs and IWB. More specifically, employees who experience a high degree of psychological freedom have a feeling of control over their works and feel connected to their colleagues are more likely to experience autonomous motivation (Deci & Ryan, 2000; Gagne & Deci, 2005). In turn, autonomously motivated employees are expected to be more likely to engage in IWB, because they are more curious, cognitive flexible, psychologically safe, goal-oriented, persistent – all characteristics and attributes which facilitate idea exploration, idea generation, idea championing and idea implementation. In contrast, when the three basic psychological needs are thwarted,

autonomous motivation will be weakened, and employees are expected to show relatively low levels of IWB.

Hypothesis 4: Autonomous motivation is positively related to employees' IWB.

Hypothesis 5a: Autonomous motivation partially mediates the relationship between satisfaction of the basic psychological need for competence and employees' IWB.

Hypothesis 5b: Autonomous motivation partially mediates the relationship between satisfaction of the basic psychological need for autonomy and employees' IWB.

Hypothesis 5c: Autonomous motivation partially mediates the relationship between satisfaction of the basic psychological need for relatedness and employees' IWB.

Influences of Cultural Values

In the literature on IWB, little attention has been paid to cultural values. However, previous research has demonstrated that culture is an important factor that influences individuals' tendency to engage in a series of innovation-relevant behaviors, such as exploration of new ways, expression of new ideas, and the effort to implement those novel ideas (e.g., Daniels & Greguras, 2014; Erez, 2010; Hofstede, 2001; Taras, Steel, & Kirkman, 2010; Yang, Mossholder, & Peng, 2007). I thus believe that cultural values may intervene in the psychological process leading to employees' IWB. Hence, I include the cultural variables in this study as three moderators.

Although cultural values have often been studied at the societal level, there are still differences exist among individuals within a culture (Oyserman, Kemmelmeier, & Coon, 2002; Singelis, Triandis, Bhawuk, & Gelfand, 1995). In other words, the notion of homogenous population within a culture may no longer be valid. For example, not every person in an individualistic culture is an individualist, and not every person in a collectivistic culture is a collectivist (Lee & Choi, 2006, p. 319). Just as nations have, in the past, been compared based on their values, so should individuals within a culture be compared in this way, especially in

managerial situations, the individual level cultural value is more important and relevant, which facilitates the most effective business effort (Kamakura & Mazzon, 1991; Farley & Lehmann, 1994). Based on the Hofstede's cultural value dimensions, I propose three most relevant cultural values (collectivism orientation, power distance and uncertainty avoidance), captured at the individual level, to clarify the psychological process leading to employees' IWB. What should be mentioned is that cultural values at the individual level are different from people's personality traits. They are conceptually distinct in important ways. Personality traits are enduring characteristics of the individual that summarize trans-situational consistencies in characteristic styles of responding to the environment (Olver & Mooradian, 2003, p.110). Evidence from the previous research indicates that personality traits are endogenous basic tendencies (MaCrae & Costa, 1996) which are strongly heritable and stable throughout adulthood. They also surprisingly immune to parental and social influences (Olver & Mooradian, 2003). Personal values on the other hand are learned beliefs about preferred ways of acting or being which serves as "guiding principles in the life of a person or other social entity" (Schwartz, 1994, p.21). It lies at the interface of the external influences (e.g., environment and education) and the endogenous basic tendencies. In others words, personality traits describe who I am, values describe who I want to be (Saroglou & Muñoz-García, 2008). In my thesis, rather studying individual differences from personality traits perspective, I focused on individual's cultural values that directly influence a series of behavior that may be consistent or inconsistent with their personality traits.

Collectivism and innovative work behavior

Collectivism can be defined as the extent to which individuals view themselves as being interdependent from others in their social group, which is one of the most widely researched among the big five cultural dimensions (Triandis, 1995). Research over the years suggests that the construct of collectivism need to be expanded from uni- to multidimensional in order to be comprehensive (Singelis et al., 1995; Triandis & Gelfand, 1998). From Triandis' conceptualization, two types of collectivism can be identified: (1) Horizontal Collectivism

(HC-cooperativeness), where people merge themselves with their in-groups; and (2) Vertical Collectivism (VC-dutifulness), where people submit to the authorities of the in-group and are willing to sacrifice themselves for their in-group (Lee & Choi, 2006, p. 320). In general, collectivism emphasizes the conformity to the group, consensus, and interdependence (Brewer & Chen, 2007). Compared with individualists, who are more concerned about their own interests and benefits, individuals with high levels of collectivism usually place greater concerns on others' or groups' benefits and welfare rather than their own (Triandis, McCusker and Hui 1990; Triandis 1995; Wong and Tjosvold 2006).

Research on creativity has highlighted the potential trade-off between social shared standards and creativity (Nemeth & Staw, 1989). Indeed, collectivists are more motivated to understand the norms for achievement in a particular context in order to meet that standard (Goncalo, 2005, p. 8). Their self-esteem is derived from meeting a shared standard in order to maintain harmony in their relationship to the group, rather than from their own idiosyncratic behavior or unique abilities. Deviants are regarded as abnormal and obstructive to maintaining the group harmony and to reaching a shared decision (Nemeth & Staw, 1989). Therefore, collectivists usually have high perceptions of conformity pressures, which lead them to conform to the majority view most of the time, even when they know the majority view is wrong (Asch, 1956).

Moreover, highly creative individuals are found to have characteristics, such as interdependence of judgements, autonomy, and self-confidence (Barron & Harrington, 1981), which allow them to break context norms to voice their creative and somewhat immature ideas. Because innovative ideas may not be readily accepted at first, employees with high collectivism may be reluctant to express their unique ideas for the fear of receiving negative feedbacks and evaluations from their peers or supervisors (Diehl & Stroebe, 1987). In sum, I expect that collectivism orientation will moderate the effects of autonomous motivation on IWB.

According to SDT theory, the relationship between satisfaction of the three basic psychological needs and autonomous motivation is universal, so I assume that the cultural values do not intervene in this process.

Hypothesis 6: Collectivism orientation moderates the relationship between autonomous motivation and employees' IWB such that it is weaker among employees with high levels of collectivism.

Uncertainty avoidance and innovative work behavior

Uncertainty avoidance is defined as "the extent to which a society feels threatened by uncertain and ambiguous situations and tries to avoid these situations by providing greater career stability, establishing more formal rules, not tolerating deviant ideas and behaviors, and believing in absolute truths and the attainment of expertise" (Hofstede, 1980, p. 45). This definition is very important because it addresses the key values and preferences in different societies (Zhang & Zhou, 2014). However, some works in cross-cultural psychology and management found substantial variations in values between individuals in a given society. In addition, some of the literature suggest that individual differences are more powerful in predicting workplace related outcome than society-level values are (Dorfman & Howell, 1988; Farh, Hackett & Liang, 2007; Taras, Kirkman, & Steel, 2010). Based on previous studies, and given that I focus on IWB as an individual-level outcome; I study uncertainty avoidance at the individual level (Hwang, 2005).

Uncertainty avoidance at the individual level refers to the degree of stress that is experienced by individuals when facing the unknown (Hofstede, 1980; House, Hanges, & Javidan, 2004). Rules and strict procedures are more important for individuals who value certainty. To avoid unexpected difficulties, they tend to reconcile their behaviors with the rules or standards. Since innovative behavior always involves uncertainties and ambiguities, innovative individuals should tend to have a high tolerance for uncertainty, a high tolerance for mistakes, and a preference for low bureaucracy, which all promote the exploration of novel ideas (Cummings, 1965; Miron, Erez, &

Naveh, 2004; O'Reilly, Chatman, & Caldwell, 1991). In contrast, individuals who show high dependence on rules, procedures, are less likely to engage in innovative behavior, because those tendencies hinder their exploration motivation and constrain the appearance of novel ideas. Hence, I believe that uncertainty avoidance will moderate the effects of autonomous motivation on employees' IWB.

Hypothesis 7: Uncertainty avoidance moderates the relationship between autonomous motivation and employees' IWB such that it is weaker among employees with high levels of uncertainty avoidance.

Power distance and innovative work behavior

At the societal level, power distance refers to the acceptance and endorsement of power differences (Hofstede & Bond, 1984). High power distance cultures emphasize the acceptance of inequality of power distribution among persons from different social orders. The norm of high power distance cultures is that those with more power (Hofstede, 2001) should control the person with less power. As I mentioned before, researchers have found that cultural values have large variations over individuals in one society (Kirkman & Shapiro, 2001). It is meaningful to study power distance at individual level. Power distance at individual level refers to "the extent to which an individual accepts the unequal distribution of power in institutions and organizations" (Farh et al., 2007, p.716). Employees with high power distance orientation believe that they should comply with their supervisors and accept their authority (Erez & Nouri, 2010). Instead of thinking independently and generating their own solutions to problems, they tend to depend on their supervisors for getting specific instructions and guidance (House, Hanges, & Javidan, 2004). The fear of being punished for deviating from norms and standards also limit their creative thinking. For example, when subordinates are asked to solve a problem, instead of breaking rules and thinking creatively, they are more likely to conform to previous experience, existing rules, and

procedures, set and respected by the person in high power orders, even though they do not believe that those practices are effective.

In contrast, employees with low power distance orientation are more likely to believe that they should share their power with those in high positions. Those employees are more autonomous, and are more willing to take responsibility, participate in the decision-making process, and voice their opinions and ideas (Erez & Nouri, 2010).

In sum, I suggest that individuals who have a high power distance orientation will be reluctant to conduct IWB even though they are autonomously motivated.

Hypothesis 8: Power distance orientation moderates the relationship between autonomous motivation and employees' IWB such that it is weaker among employees with high levels of power distance.

My Hypotheses 1,2,3,4 and 5a-c propose that satisfying the three basic psychological needs will be positively related to employees' IWB, and that autonomous motivation will partially mediate the effects of satisfaction of the three basic psychological needs on employees' IWB. In addition, my Hypotheses 6, 7 and 8 propose that collectivism, uncertainty avoidance and power distance orientation will moderate the relationship between autonomous motivation and employees' IWB. Based on those hypotheses, I also propose that the three cultural values will moderate these mediated relationships, such that the indirect effects of satisfaction of need for competence, need for autonomy and need for relatedness on IWB through autonomous motivation will be weakened when the employees have high collectivism, high uncertainty avoidance or high power distance orientation. Thus, I propose three integrated moderated mediation models hypotheses as follows:

Hypothesis 9a: The positive indirect effect of satisfaction of the three basic psychological needs (need for competence, need for autonomy, need for relatedness) on employees' IWB (though

autonomous motivation) is weaker when the collectivism orientation is high.

Hypothesis 9b: The positive indirect effect of satisfaction of the three basic psychological needs (need for competence, need for autonomy, need for relatedness) on employees' IWB (though autonomous motivation) is weaker when the uncertainty avoidance is high.

Hypothesis 9b: The positive indirect effect of satisfaction of the three basic psychological needs (need for competence, need for autonomy, need for relatedness) on employees' IWB (though autonomous motivation) is weaker when the power distance orientation is high.

METHOD

Sample and Procedure

This empirical research was conducted at two large Chinese medical equipment and supply companies using survey methodology. These two companies are very important designers, distributors and manufactures of medical products for the healthcare industry in China. As the survey intends to investigate the IWB among all employees, I collected data from both functional departments (e.g., human resource management department, marketing department, manufacturing department, channels department, international departments) and the R&D departments of the two companies. To avoid response bias, instead of only using self-report design to measure employees' IWB, supervisors were invited to evaluate their employees' IWB during the daily work.

Before I distributed the questionnaires online, I contacted the managers of human resource departments of these two companies, and got the permission to conduct this research within their companies. Instead of emailing the questionnaire link directly to each employee, I used their internal communication systems: each employee and their supervisor (except production personnel) has their own ID in the platforms, which can be easily accessed. Administrators helped me to send questionnaire links to employees and supervisors. To match the dyads, I asked employees to provide their name, and I asked supervisors to provide the name of the employee who they were evaluating. After sending one invitation and two reminders to employees and supervisors in both

companies, I received 148 completed employee questionnaires from Company 1 (a response rate of 57.8%) and 136 completed employee questionnaires in Company 2 (a response rate of 39.5%), for a total of 284 employee questionnaires. However, I only received 22 completed supervisor questionnaires from Company 1 (a response rate of 8.6%) and 54 completed supervisor questionnaires from Company 2 (a response rate of 15.7%), for a total of 76 completed supervisor questionnaires. Furthermore, among these 76 supervisor questionnaires, 52 were for employees who had not completed the employee questionnaire. Thus, I used the self-reported measure of IWB rather than supervisor reports in my analyses. Among all the respondents in company 1, 51.3% are male and 48.7% are female. The average age of the respondents was 33 years old (SD = 6.20), and the average organizational tenure, 4.5 years (SD = 3.50). Among all the respondents in company 2, 75.7% are male and 24.3% are female. The average age of the respondents was 34 years old (SD = 6.09), and the average organizational tenure, 4.5 years (SD = 1.92).

T tests were done to examine sample differences in variable means. Results show that there are no significant differences in terms of the eight variables for the two groups of sample. I can thus combine the data obtained from the two companies to test my hypotheses (see Appendix C).

Measurement

All variables were measured using previously validated scales, in Chinese. Scales were translated from English into Chinese using a standard translation back-translation procedure, with the exception of the measures of basic psychological need satisfaction and autonomous motivation for which I used previously validated Chinese translations from Wang and Gagné (2012). Except for demographics, variables were assessed using 7-point Likert-type scales.

Basic psychological need satisfaction

To measure the needs satisfaction of employees, I used the 16-item Work-related Basic Need Satisfaction Scale (W-BNS scale) (Van den Broeck, Vansteenkiste, DeWitte, Soenens, & Lens, 2010) to assess the satisfaction of employees' work related basic needs as defined in

Self-Determination Theory (SDT) literature (Deci & Ryan, 2008). The W-BNS scale shows a psychologically sound, three-factor structure that distinctly measures three basic psychological needs: autonomy, competence and relatedness (Van den Broeck et al., 2010). I used the translated scale validated by Wang and Gagné (2012). Respondents are asked to rate their level of agreements with each statement on a 7-point Likert scale ranging from strongly disagree to strongly agree. Sample items are "At work, I often feel like I have to follow other people's commands (reverse-coded)" (satisfaction of need for autonomy); "I really master my tasks at my job" (satisfaction of need for competence); "At work, I feel part of a group" (satisfaction of need for relatedness). Cronbach's alpha for the three needs satisfaction scales were .85 for satisfaction of need for autonomy, .78 for satisfaction of need for competence and .84 for satisfaction of need for relatedness.

Autonomous motivation

The construct of autonomous motivation was measured by the subscales adapted from the revised Motivation at Work Scale (Gagné et al, 2010), asking employees to indicate the reason for which they put efforts into their job. I also used the scale translated by Wang and Gagné (2012). Based on SDT, autonomous motivation is composed of intrinsic motivation and identified motivation. Three items were used to measure intrinsic, and three items were used to measure identified motivation. Sample items are "Because I enjoy this work very much" (intrinsic motivation) and "Because this job fulfills my career plans." (Identified motivation). The mean of the items measuring intrinsic motivation and identified motivation was calculated and used as "autonomous motivation" to test my hypotheses in this study. The Cronbach's alpha for the overall autonomous motivation scale is .87.

Cultural values

Collectivism orientation. I used the subscale (8 items) of Horizontal and Vertical Individualism and Collectivism Scale (Sivadas, Bruvold & Nelson, 2008) to measure employees' collectivism

orientation. Employees were asked to indicate the extent to which they agree with the scale items on a 1 (strongly disagree) to 7 (strongly agree). A sample item is "The well-being of my co-workers is important to me". As has been done in past research, I used the mean of the 8 items measuring horizontal and vertical collectivism to form a single factor for collectivism orientation at the individual level. The Cronbach's alpha of this sub-scale is .77.

Power distance orientation. To measure the power distance orientation at the individual level, I used 8 items from Erez and Earley (1997). Participants were asked to what extent they agreed with each statement on a 7-point Likert scale ranging from 1 =strongly disagree to 7 =strongly agree. A sample item is "In most situations, managers should make decision without consulting their subordinates". The Cronbach's alpha is .84.

Uncertainty avoidance. Uncertainty avoidance was captured using 4 items adapted from Dorfman and Howell (1988). Respondents were asked to rate their level of agreements with each statement on a 7-point Likert scale ranging from 1 =strongly disagree to 7=strongly agree. A sample item is "It is important to have job requirements and instructions spelled out in detail so that employees always know what they are expected to do". The Cronbach's alpha for this scale is .89.

Innovative work behavior (IWB)

I used ten items from De Jong and Den Hartog (2016) to evaluate the employees' IWB. Each employee was required indicate how frequently they manifest the behavior mentioned in the survey. Supervisors were also invited to rate their employees' IWB in their daily work. Because I did not collect enough data from supervisors, I used self-report data for measuring IWB. The self-report also has its advantages. First, an employee has a better understanding of his or her own work activities, such as the historical, contextual, intentional backgrounds, so an employee's report of his or her own IWB may be subtler (Janssen, 2000). Second, the supervisor measure may ignore some unexpressed employees' innovative activities, and only recognize those that have impressed to them. Sample items are "pay attention to issues that are not part of your daily

work" (idea exploration); "generate original solutions for problems" (idea generation); "make important organizational members enthusiastic for innovative ideas" (idea championing); "systematically introduce innovative ideas into work practices" (idea implementation). Answers were scored on a 7-point Likert-type scale ranging from 1= almost never to 7= almost always. Given the high inter-correlations among the four dimensions of IWB and the recommendation of Janssen (2000), as has been done in past research (Devloo et al., 2015), I used the average of the 10 items to get an overall score of IWB. The Cronbach's alpha of the scale is .90.

Control variables

Age, gender, supervisor and organization tenure were measured in this study, as some previous research on IWB has included them as control variables. However, there are no theoretical reasons, and no evidence seems to support the influence of those variables on IWB. In contrast, some scholars suggest that age is unrelated to idea creativity (Binnewies et al., 2008; Andersson, Berg, Lawenius, & Ruth, 1989), and gender has no direct effects on creativity (Smith, Sardeshmukh, & Combs, 2015). I thus did not include any these variables in the analyses.

ANALYSES AND RESULTS

To check if the model fits the data, I did confirmatory factor analysis (CFA) for each measure. Following the recommendation of Bollen & Long (1993), in order to decease the effects of sample size and model complexity, I chose root-mean square error of approximation (RMSEA), the comparative fit index (CFI), and the non-normed fit index (NNFI) to assess the model fit.

The model-fit indices (Autonomous motivation: χ^2=39.13, p= .000; df = 20; RMSEA= .10; CFI= .96; NNFI= .95; IWB: χ^2 =82.64, p = .000; df = 35; RMSEA= .07; CFI= .96; NNFI= .94; Collectivist Orientation: χ^2 =74.30, p = .000; df = 20; RMSEA= .07; CFI= .99; NNFI= .90; Power distance perception: χ^2 =127.08, p = .000; df = 28; RMSEA= .011; CFI= .86; NNFI= .83; Uncertainty avoidance: χ^2 =5.27, p = .000; df = 2; RMSEA= .07; CFI= .99; NNFI= .99) confirm that the model of each measure fits the data. For satisfaction of the three basic psychological

needs, because of the high inter-correlation among the three sub-scales (satisfaction of need for competence, satisfaction of need for competence, and satisfaction of need for relatedness), I did a CFA for each of the three sub-scales. The results (satisfaction of need for competence: χ^2 =. 14, p = .000; df = 2; RMSEA= .05; CFI= .99; NNFI= .98; satisfaction of need for autonomy: χ^2 =26.85, p = .000; df = 9; RMSEA= .08; CFI= .97; NNFI= .96; satisfaction of need for relatedness: χ^2 =23.15, p = .01; df = 9; RMSEA= .07; CFI= .98; NNFI= .96) also indicate a good fit.

In addition to doing confirmatory factor analysis for each variable in this study, I also did a confirmatory factor analysis with the whole measurement model. The fit of the hypothesized eight-factor model, in which each multi-item scale loaded on separate first-order latent factor, does not quite meet the threshold for all fit indices, as the CFI and NNFI were below .95 (χ^2 = 623.37, p = .000; df = 347; RMSEA= .05; CFI= .94, NNFI=. 93) (Hu & Bentler, 1999). However, it fits the data better than a six-factor model combining the three psychological needs (χ^2 = 657.31, p = .000; df = 360; RMSEA= .05; CFI= .93, NNFI=. 92, $\Delta\chi^2$ [13] = 33.94, $p < .01$), and a one-factor model (χ^2 = 2159.52, p = .000; df = 375; RMSEA= .13; CFI= .61, NNFI=. 57, $\Delta\chi^2$ [28] = 1536.15, $p < .01$). As the chi-square difference test suggests that the hypothesized eight-factor model fits the data better than the other models, I retained the eight-factor model.

To check the potential effects of common method biases, Harman's single-factor test was used. This test examines whether the majority of the variance (over 50%) can be accounted for by one factor (Podsakoff, MacKenzie, Podsakoff, 2003). In this case, 23.65% variance was captured by this factor, which suggest that common method biases may not be a big concern with this dataset.

Table 1 presents means, standard deviations, and zero-order Pearson correlations for the variables investigated in this study. All correlations are in the expected direction. Specifically, the three basic psychological needs satisfaction are found to be positively related to each other. Need for autonomy is significantly correlated with need for competence (r = .79, p <.001) and need for

relatedness (r= .80, p <.001). In addition, the satisfaction of needs for competence, autonomy and relatedness are positively related to autonomous motivation (r_c = .79, p<. 001; r_a= .72, p <.001; r_r = .76, p<.001, respectively). Satisfaction of needs for competence, autonomy, and relatedness are also positively related to IWB ($r_{c'}$= .60, p <.001; $r_{a'}$ = .58, p <.001; $r_{r'}$= .59, p<.001, respectively). Lastly, autonomous motivation is positively related to IWB (r = .63, p<.001).

Among the three cultural value variables, collectivism is found to be positively related to uncertainty avoidance (r = .26, p <.001) and power distance (r = .43, p <.001). Collectivism (r = .16, p<.001) and power distance (r = .14, p<.05) are positively related to autonomous motivation. Positive relationship between collectivism (r = .14, p<.05), power distance (r = .15, p<.05) and satisfaction of need for relatedness were found. To rule out the existence of multicollinearity, I examined the variance inflation factors (VIFs). Result shows all the VIFs are below five (Vogt, 2007), suggesting multicollinearity is not a concern in my study.

Table 1. Means, Standard Deviations, and Correlations

Variable	Mean	SD	1	2	3	4	5	6	7	8
1. Coll	4.08	0.99								
2. PD	3.64	1.07	.43**							
3. UA	4.39	1.40	.26**	0.11						
4.BPNS _ Autonomy	4.43	1.16	0.11	0.08	-0.02					
5.BPNS_ Competence	4.60	1.14	.20**	.15*	.13*	.79**				
6.BPNS_ Relatedness	4.58	1.20	.14*	.15*	0.07	.80**	.86**			
7. AM	4.51	1.11	.16**	.14*	0.10	.72**	.79**	.76**		
8. IWB	3.87	1.07	.05	.09	-.15*	.58**	.60**	.59**	.63**	

Note1. N= 284
*Note2. ** p < .01 level (2-tailed) * p < .05 level (2-tailed);*
Note3. BPNS = Satisfaction of Basic Psychological needs; AM= autonomous motivation; Coll= collectivism; UA= uncertainty avoidance; PD= power distance; IWB= innovative work behavior

Hypotheses 1, 2, and 3 predict that satisfaction of the three basic psychological needs – need for competence, need for autonomy, and need for relatedness is positively associated with employees' IWB. Hypothesis 4 suggests that autonomous motivation is positively related to IWB. Hypotheses 5a-c predict that the effects of satisfaction of the three basic psychological needs on IWB is partially mediated by autonomous motivation. To test the direct and indirect effects of three needs satisfaction on IWB, I chose SPSS plugin—PROCESS, developed by Dr. Andrew Hayes. Model 4 was used to examine the hypothesized relationship. Effects were tested in separate models, as PROCESS does not allow the inclusion of several independent variables in a mediated model. Results for these analyses, shown in Table 2, reveal that basic psychological needs for competence (β=.77, p< .01), autonomy (β=.70, p< .01) and relatedness (β=.70, p< .01) (refer to path a) are respectively significantly related to autonomous motivation, as expected. Path c refers to the direct effects of three basic psychological needs on IWB. Results show that the satisfaction of needs for competence, autonomy and relatedness are respectively positively

related to IWB (β=.25, p< .01, β=.25, p< .01, and β=.24, p< .01, respectively), supporting Hypotheses 1, 2 and 3. Path b refers to the relationship between autonomous motivation and IWB. Results shows that the autonomous motivation is positively related to IWB (β_1=.40, p< .01; β_2=.42, p< .01; β_3=.39, p< .01). Hence, Hypothesis 4 is supported. When checking the path d, the indirect effects, I found that the indirect effects of three basic psychological needs on IWB through autonomous motivation are all positively significant (β_1=. 31, p< .01, BCa95% CI: .19 to .43; β_2=. 29, p< .01, BCa95% CI: .19 to .40; β_3=. 29, p< .01, BCa95% CI: .18 to .38). The total effects (direct effects +indirect effects) of three basic psychological needs satisfaction on IWB are .56 (need for competence), .54 (need for autonomy), .53(need for relatedness) respectively, which are also significant. And with the existence of the indirect effects, the direct effects of three needs satisfaction on IWB are still significant, which means the autonomous motivation respectively partially mediates the relationship between three needs satisfaction and IWB. Therefore, Hypotheses 5a, b and c are supported.

Table 2. Beta coefficients for direct and indirect effects of basic psychological needs satisfaction on innovative work behavior via autonomous motivation

					Indirect effect	
					BCa95%CI	
IV	(a) X->M	(b) M-> Y	(c) X->Y	(d)(X->M->Y)	Low	High
BPNS_Competence	.77**	.40**	.25**	.31**	.19	.43
BPNS_Autonomy	.70**	.42**	.25**	.29**	.19	.40
BPNS_ Relatedness	.70**	.39**	.24**	.29**	.18	.38

Note 1. N=284

*Note 2. ** p < .001 level (2-tailed); Note3. BPNS = Satisfaction of Basic Psychological needs; AM= autonomous motivation; IWB= innovative work behavior.*

Note 3. X refers to the independent variables (basic psychological needs satisfaction for competence, autonomy and relatedness), M refers to the mediator (autonomous motivation), and Y refers to the dependant variable (innovative work behavior).

Hypotheses 6, 7 and 8 predict that collectivism, power distance and uncertainty avoidance weaken the effect of autonomous motivation on IWB. Hypothesis 9 proposes an integrated moderated mediation model. Specifically, it predicts that the three basic psychological needs affect employees' IWB indirectly though autonomous motivation, and that those effects are conditional on the degree of collectivism, uncertainty avoidance and power distance. In other words, I should conduct analysis of conditional indirect effects, defined as the magnitude of an indirect effect at a particular value of a moderator (or at particular values of more than one moderator) (Preacher, Rucker, & Hayes, 2007, p.186).

I still chose SPSS plugin—PROCESS, to test the moderated mediation. One significant advantage for PROCESS is that it allows the use of bootstrapping, which is a resampling strategy for estimation and hypothesis testing. In bootstrapping, the sample is conceptualized as a pseudo-population that represents the broader population from which the sample was derived (Preacher et al., 2007, p.190). Moreover, PROCESS contains the options to automatically center the variables on the mean, which is good for the control for multicollinearity. In the present study, autonomous motivation, collectivist orientation, uncertainty avoidance and power distance were centered on the mean. However, as PROCESS only supports models with one independent variable, one dependent variable and one moderator, nine models (Model 14) were run using PROCESS. The summaries of the nine models (include their sub-models) show that all the models I ran in PROCESS are significant ($p < .001$) (see Table 3). The direct, indirect and moderating effects in the nine models are presented in Table 4.

Table 4 shows the strength of the direct and indirect effects from the three psychological basic needs on IWB with the existence of collectivism, uncertainty avoidance and power distance.

Edwards and Lambert (2007) and Preacher et al. (2007) show that the conditional indirect effects of X on Y through M is a_i (b_{1i}+b_{3i}V), which can be rewritten in equivalent form as a_ib_{1i}+ab_{3i}W. Therefore, the indirect effect of X on Y through M is a linear function of V. The weight for V in this function, $a_ib_{3i,}$ is the index of moderated mediation in this model. It quantifies the effect of V on the indirect effect of X on Y through M.

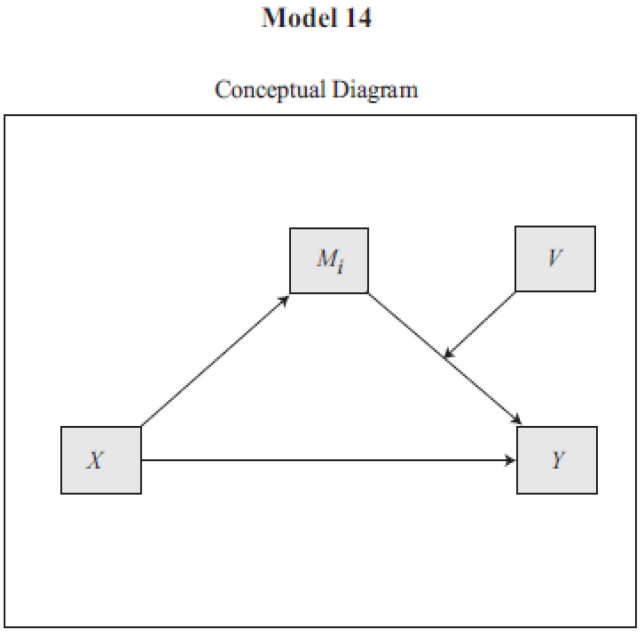

Figure 2. Model 14's Conceptual Diagram

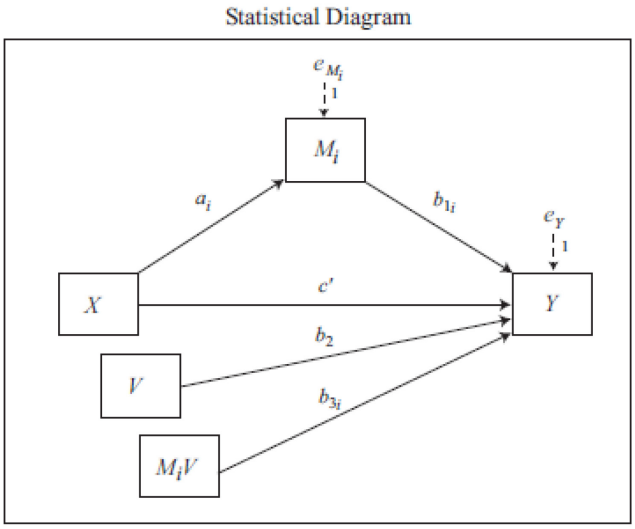

Figure 3. Model 14's Statistical Diagram

Table 3. Model Summaries

	Autonomous (DV)			IWB (DV)		
	R2	**F**	**sig.**	**R2**	**F**	**sig.**
Model 1-1	.62	465.8	.000	.43	52.99	.000
Model 1-2	.62	465.8	.000	.48	64.83	.000
Model 1-3	.62	465.8	.000	.45	57.9	.000
Model 2-1	.52	310.62	.000	.44	54.4	.000
Model 2-2	.52	310.62	.000	.48	63.56	.000
Model 2-3	.52	310.62	.000	.45	52.26	.000
Model 3-1	.57	376.56	.000	.43	53.66	.000
Model 3-2	.57	376.56	.000	.48	64.33	.000
Model 3-3	.57	376.56	.000	.46	58.63	.000

Note1:
Model 1 with satisfaction of basic psychological need for competence as independent variable; Model 2 with satisfaction of basic psychological need for autonomy as independent variable; Model 3 with satisfaction of basic psychological need for relatedness as independent variable.
Note2: Each model includes two sub-models. The outcome of the first sub-model was autonomous motivation, and the outcome of the second sub-model was innovative work behavior.

Table 4. Moderated Mediation Model

		BPNS					
		Competence		Autonomy		Relatedness	
		AM	IWB	AM	IWB	AM	IWB
		a_i	c'	a_i	c'	a_i	c'
BPNS_ Competence		.77**	.28**	.69**	.27**	.71**	.26**
AM	b_{1i}		.27		.20		.30
Coll	b_2		-.22		.30		-.19
AM* Coll	b_{3i}		.03		.05		.03
BPNS _ Autonomy		.77**	.28**	.69**	.23**	.71**	.24**
AM	b_{1i}		.22		.20		.23
UA	b_2		-.36*		-.41*		-.37*
AM*UA	b_{3i}		.04		.05†		.04
BPNS _ Relatedness		.77**	.20*	.69**	.17*	.71**	.19*
AM	b_{1i}		.94**		.90**		.92**
PD	b_2		.64**		.56*		.62**
AM*PD	b_{3i}		-.14**		-.13*		-.14**

Note 1: BPNS = Satisfaction of Basic Psychological needs; AM= autonomous motivation; Coll= collectivism; UA= uncertainty avoidance; PD= power distance; IWB= innovative work behavior
Note 2: N = 284 (list wise deletion)
*Note 3: ** p<. 001; * p<. 05; † p<. 10*
Note 4: Conditional indirect effect of X on Y through $M_i = a_i (b_{1i} + b_{3i}V)$; Direct effect of X on Y = c'

The results in Table 5 reveal that only the interaction terms for autonomous motivation and power distance are significant (β = -.14, p< .001; β= -.13, p<. 05; β = -.14, p< .05). Table 6 shows the indirect effects of satisfaction of the three psychological needs on IWB and the indexes of moderated mediations with collectivism, uncertainty avoidance and power distance as the second stage moderator respectively. The results reveal that only the indexes of moderated mediation with power distance as moderator is significantly different from zero, which indicates that only Hypothesis 8 and Hypothesis 9c are supported.

Table 5. Conditional Indirect effects and Index of Moderated Mediation

	Indirect effects	Bca 95% CI(LLCI-ULCI)	Index	Bca 95% CI(LLCI-ULCI)
1.1BPNS_competence			.02	(-.04 to .08)
low Coll	.28	(.15 to .41)		
high Coll	.33	(.15 to .41)		
1.2BPNS_autonomy			.04	(-.02 to .09)
low Coll	.25	(.14 to .36)		
high Coll	.32	(.21 to .44)		
1.3BPNS_relatedness			.02	(-.04 to .07)
low Coll	.27	(.16 to .37)		
high Coll	.31	(.18 to .43)		
2.1BPNS_competence			.03	(-.01 to .07)
low UA	.26	(.13 to .38)		
high UA	.34	(.22 to .46)		
2.2BPNS_autonomy			.04	(.00 to .07)
low UA	.25	(.14 to .37)		
high UA	.35	(.21 to .40)		
2.3BPNS_relatedness			.03	(-.01 to .07)
low UA	.25	(.14 to .36)		
high UA	.33	(.22 to .44)		
3.1BPNS_competence			-.11	(-.18 to -.06)
low PD	.43	(.31 to .54)		
high PD	.19	(.05 to .34)		
3.2BPNS_autonomy			-.09	(-.15 to -.03)
low PD	.40	(.29 to .50)		
high PD	.21	(.08 to .34)		
3.3BPNS_relatedness			-.10	(-.16 to -.05)
low PD	.39	(.29 to .50)		
high PD	.18	(.05 to .31)		

Note 1: N = 284

Note 2: BPNS = Satisfaction of Basic Psychological needs; Coll= collectivism; UA= uncertainty avoidance; PD= power distance; Index= Index of moderated mediation

Note 3: low moderator= low level of moderator (mean -1Std Dev); high moderator= high level of moderator (mean +1Std Dev)

To plot this interaction, I used power distance at one standard deviation below (i.e., low level) and above (i.e., high level) the mean. The plot of the interaction is shown in Figure 4 (Model with need for competence as independent variable). The plots of the interaction for model with need for autonomy as IV and need for relatedness as IV follow the similar pattern.

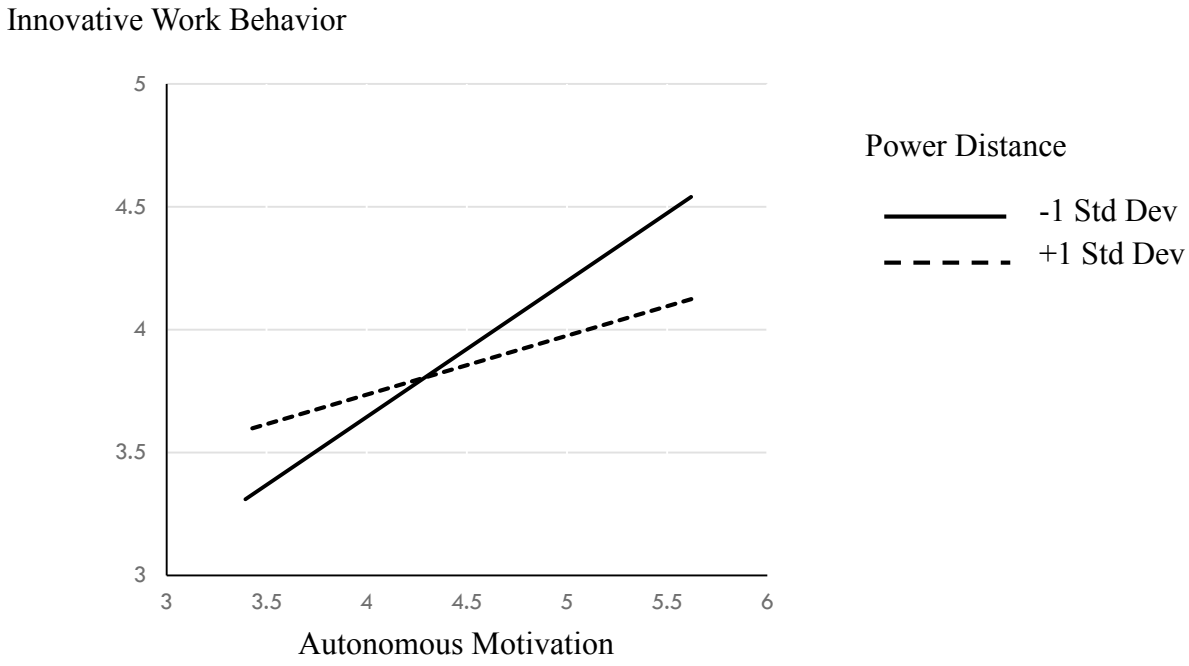

Figure 4. Interaction Plot of Power Distance and Autonomous Motivation (Model 1-3)

Table 6. Overview of the Results

Hypotheses	Supported	Not supported
H1: Satisfaction of the basic psychological need for competence is positively related to employees' IWB.	√	
H2: Satisfaction of the basic psychological need for autonomy is positively related to employees' IWB.	√	
H3: Satisfaction of the basic psychological need for relatedness is positively related to employees' IWB.	√	
H4: Autonomous motivation is positively related to employees' IWB.	√	
H5a: Autonomous motivation partially mediates the relationship between the satisfaction of the basic psychological need for competence and employees' IWB.	√	
H5b: Autonomous motivation partially mediates the relationship between the satisfaction of the basic psychological need for autonomy and employees' IWB.	√	
H5c: Autonomous motivation partially mediates the relationship between the satisfaction of the basic psychological need for relatedness and employees' IWB.	√	
H6: Collectivism orientation moderates the relationship between autonomous motivation and employees' IWB.		√
H7: Uncertainty avoidance moderates the relationship between autonomous motivation and employees' IWB.		√
H8: Power distance orientation moderates the relationship between autonomous motivation and employees' IWB.	√	
H9a: The positive indirect effect of the three basic needs satisfaction (need for competence, need for autonomy, need for relatedness) on employees' IWB (though autonomous motivation) is weakened when the collectivism orientation is high.		√
H9b: The positive indirect effect of the three basic needs satisfaction (need for competence, need for autonomy, need for relatedness) on employees' IWB (though autonomous motivation) is weakened when the uncertainty avoidance is high.		√
H9c: The positive indirect effect of the three basic needs satisfaction (need for competence, need for autonomy, need for relatedness) on employees' IWB (though autonomous motivation) is weakened when the power distance orientation is high.	√	

DISCUSSION

Based on Self-determination theory, my research intends to explore the motivational mechanism of employees' IWB. I also examined how individual level cultural values influence this proposed mechanism. This study's results suggest that satisfaction of basic needs for autonomy, competence and relatedness enhances employees' IWB. These relationships were consistent with expectations, as prior evidence had suggested a positive relationship between the satisfaction of basic needs and IWB (Devloo et al., 2015). Furthermore, this study's findings indicate that this relationship is partially mediated by autonomous motivation. This is also consistent with expectations, as self-determination theory suggests that satisfaction of three basic psychological needs (autonomy, competence, and relatedness) facilitates autonomous motivation. Autonomously motivated people are more hard-working, patient, persistent and goal oriented. Besides, people with autonomous motivation are usually better at leveraging knowledge (Parker, Bindl, & Strauss, 2010), which is necessary for problem-solving and efficient work. Also in line with expectations, this study suggests that power distance moderates the relationship between autonomous motivation and employees' IWB such that it is weaker among employees with high levels of power distance. This indicates that the beneficial consequences of experiencing autonomous motivation may depend on the extent of employees' power distance orientation.

There are several unexpected findings in my study. First, employees' collectivism orientation was not found to have moderating effects on the relationship between autonomous motivation and IWB. One possibility could be the innovation-enhancing norm within the organization. Many managers and theorists started to recognize that organizational culture, especially the innovation norm is one of the main driving forces behind creativity and innovation. Faced with the high competition in the healthcare industry in China, and the rapidly improving medical demands among Chinese people, these two organization may make great effort to promote the innovation-enhancing norms. As I mentioned before, individuals with high collectivist orientation

are reluctant to deviate from shared norms, and they usually place greater concerns on groups' benefits and welfare (Triandis, McCusker and Hui 1990; Triandis 1995; Wong and Tjosvold, 2006). Moreover, if being innovative goes along with group norms, collectivistic individuals may strive to do this. Therefore, high collectivism orientation did not show significant moderating effects. Second, the interaction term of autonomous motivation and uncertainty avoidance was not significant, but the uncertainty avoidance was significantly negatively related to IWB. This suggests that when people tend to avoid uncertainty, they are reluctant to engage in IWB, regardless of their level of autonomous motivation. This is consistent with the view that engaging in innovative work behavior comes more easily to individuals who are comfortable with ambiguity and uncertainty, since innovation involves trials, errors, and the risk of failing. These findings highlight the role of personal values in predicting workplace behavior.

Theoretical Implications

The results of this study contribute to both IWB research and SDT theory. Since employees' IWB is necessary for organizations to stay competitive in the market, understanding factors that influence IWB and exploring the psychological mechanism are necessary. Previous research has focused on studying the factors that influence employees' IWB, but research focusing on the psychological mechanism of IWB is very limited. This research contributes to the literature of IWB by examining its psychological mechanism. The results provide further evidence for the suggested direct relationship between three basic psychological needs satisfaction (need for competence, need for autonomy, and need for relatedness) and employees' IWB (Devloo et al., 2015). In addition, this study investigates the enhancement mechanism of autonomous motivation on IWB. In the past creativity and innovative behavior literature, intrinsic motivation has been advanced as a very important motivational mechanism to explain individual innovation (Janssen & Van Yperen, 2004). Devloo et al (2015) also included the intrinsic motivation as a mediator in their study to explore its effects on IWB. However, many researchers in the field of education suggested that autonomous motivation, which encompasses both intrinsic motivation and

identified motivation, could predict individuals' innovation behaviors (Cadwallader, Jarvis, Bitner, Ostrom, 2010). Therefore, my study extended past work to organizational management field, demonstrating the generalizability of autonomous motivation mechanism beyond the domain of education. Results provide evidence for the indirect effects of satisfaction of the three needs on IWB through the partial mediation of autonomous motivation. Moreover, I included three individual level cultural values in the model to check whether individual differences exert influence on this psychological process. Results reveal that power distance can moderate the effects of autonomous motivation on IWB, which suggests that it is meaningful to consider employees' individual differences when studying employees' IWB.

Furthermore, the present study also contributes to the Self-determination theory. SDT theory has served as theoretical basis for many studies on different topics. However, its application to employees' innovative work behaviour is very limited. In my study, SDT theory is chosen as a theoretical basis to examine the psychological mechanism of employees' IWB, which enriches the application of SDT theory on different topics. Further, the significant moderating effects of power distance provides evidence that even though the three needs are universal, when using them to explain and predict human's behavior, it is still necessary to consider the influence of individual differences, such as values, into consideration.

The past studies on SDT theory have suggested that the three basic psychological needs are distinct. However, in my research, the correlations among three needs are unexpectedly high. Although the model CFA showed that the eight - factors model was the best, considering the just passable fit index, it would be better to test if those three needs are highly inter-correlated in some contexts. For instance, it is possible that in some cultures, the three needs are not as distinct. This is an interesting avenue for future research, and those studies would be meaningful for the wide applications of SDT theory in different cultures or contexts.

Practical Implications

The current study also has practical implications. Findings support the relationship between satisfaction of the basic psychological needs and IWB, as well as the partial mediating role of autonomous motivation. Results indicate that organizations that aim to stimulate their employees' IWB should concentrate on employees' satisfaction of their three basic psychological needs. Previous research has suggested that a series of job related factors, such as job demands, leadership style, organizational climate (Janssen, 2000; Tu & Lu, 2013) have positive effects on employees' IWB, but this study highlights the importance of creating an environment that fulfills employees' psychological needs. For example, to enhance employees' satisfaction of basic psychological need for autonomy, companies can involve employees in the decision making process, such as creating minor decision-making opportunities for employees. To strengthen employees' satisfaction of the basic psychological need for competence, organizations can provide some professional training courses for their employees, or establish open communication channels, through which employees can feel comfortable to ask questions and to get feedback. The learning and problem-solving process can enhance employees' feelings of competence. Also, employees can be trained to set realistic goals during the daily work, as realizing their goals can improve employees' satisfaction of need for competence. Lastly, to improve employees' satisfaction of the basic psychological need for relatedness, organizations can organize some organizationally sponsored event to make employees feel that they are parts of the organization (Deci, Connell, & Ryan, 1989).

This study also found that power distance moderates the effect of autonomous motivation on IWB, which means with similar levels of autonomous motivation, employees with high power distance perception are less likely to implement IWB compared with those with low power distance perception. Therefore, managers should be aware of their employees' power distance orientation. Rather than treating all the employees within one group similarly, managers should take a more intimate approach when dealing with employees of high power distance than when

dealing with employees of lower power distance, especially when allocating tasks to employees. Given that followers with a high power distance orientation tend to obey orders and follow direction, it is necessary for them to feel that they have the power to decide which way is the best to complete tasks, rather completely obeying guidance to complete the task step by step. However, when dealing with employees with low power distance, leaders may need to provide them with more specific directions (Robert, Probst, Martocchio, Drasgow, & Lawler, 2000; Welsh, Luthans, & Sommer, 1993). Since IWB should comply with organization's goal, the appropriate and specific direction and guidance would be useful for them to produce and implement more effective innovative ideas.

Previous research suggested that leadership styles, such as transformational leadership are less likely to positively influence follower's outcome in high power distance culture (Kirkman, Chen, Farh, Chen, & Lowe, 2009). Therefore, in order to maximize the effects of manager's behaviour on employees with high power distance, organizations should create a low power distance organizational culture. For example, a more convenient communication system can be used, where employees can easily get access to their supervisors for help and feedback (DE Luque & Sommer, 2000) which are beneficial for the idea championing and idea implementation. Decreasing the wide disparity in rewards for people in different positions and abandoning the use of designated parking spots or dining areas can also convey a message of low power distance. In addition, open-concept office designs would increase the frequency of contacts between superiors and subordinates, which may help to create a lower power distance culture. Moreover, involving employees in the decision-making process would probably affect their power distance perception.

Another practical implication is that in order to identify level of power distance orientation, organizations or departments, which values employees' IWB, should include the measure of power distance orientation as a part of the hiring, training, and evaluation.

Limitations and Future Research Directions

There are some limitations of this study. The cross-sectional research design constrains the validity of the conclusion drawn from the present study. The study only captured employees' psychological condition at a specific point in time, and cannot exclude the effects of some other influential factors. In addition, the cross sectional data fails to indicate the sequence of behavior—whether the IWB results from or result in the satisfaction of three basic psychological needs. Indeed, cross-sectional analysis of mediational processes may lead to biased estimates of mediation parameters (Maxwell & Cole, 2007). As suggested by Devloo et al (2015), engaging in IWB facilitates the satisfaction of three basic needs. I encourage researchers to continue this line of research by conducting longitudinal studies to explore the causal relationships implied in this study.

Second, the present research relied on self–report for measuring IWB, and it is possible that self-reports for such behaviors were biased. For example, social desirability may have influenced participants' answers. Furthermore, data were collected from employees at one point in time using one method, which raises the possibility that common method variance may have had an effect on relationships between variables (Podsakoff, MacKenzie, & Podsakoff, 2012; Podsakoff et al., 2003). Although I conducted analyses to address this issue, it remains a potential concern. Further, all the variables were measured using 7- point Likert – type scales. Use of the same scale format on a questionnaire may produce artificial covariation (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003). Because the standardized format requires less cognitive processing, some covariation observed among constructs may be caused by consistency in the scale property. Therefore, future research could address these issues by including self-reports, supervisor ratings, and peer ratings to measure the innovative work behavior, and choosing different scale formats to measure the relevant constructs. The descriptive analysis shows that all the variable means are around four. There might be a response bias. Respondents in some contexts may have the tendency to avoid

extreme answers. Indeed, research suggests that Chinese respondents have a tendency to avoid extremes, and use the middle response of rating scales (Harzing, 2006).

Third, the scale of IWB was translated from English to Chinese. The content equivalences between the original and translated instruments could be a problem of my study, especially as the structure of English is quite different from that of Chinese. In my study, two bilingual people used single back-translation method to translate scales of innovative work behavior. The limited number of bilingual people and the simple review process may affect the quality of translated scales. Future researchers could try a combination of translation techniques based on the nature and environment of the research. In addition, the translated instruments need to be validated with the target population before starting collecting data (Cha, Kim & Erlen, 2007).

Fourth, it must be pointed out that the confirmatory analysis results for the hypothesized eight-factor model revealed a fit that was lower than the recommended threshold for some indices. Although the hypothesized model fit the data better than more parsimonious models, this constitutes a limitation of this study and suggests results must be interpreted with caution. In addition, with regards to hypotheses testing, I did not test the full model in one analysis. While this is due to statistical constraints (as the PROCESS macro did not allow for the inclusion of several independent variables in the model), the fact that the complete model was not tested simultaneously nevertheless is a limitation of this study.

Lastly, I failed to find the suggested effects of uncertainty avoidance and collectivism on IWB. In order to examine whether those unexpected results were because of the target country, industries or organization, further study including a wider variety of industries, organizations and departments is necessary. Moreover, future researchers can replicate this study in other countries where cultural values are different from those of China.

Conclusions

My intent in this study was to investigate the underlying psychological mechanism of employees' IWB. More specifically, I wanted to know whether satisfaction of employees' three basic psychological needs would contribute to their IWB. Based on self-determination theory, I introduced humans' three basic psychological needs (need for competence, need for autonomy and need for relatedness) as the independent variables and the autonomous motivation as a mediator between the three needs and IWB. As SDT theory suggests, human's basic psychological need for competence, need for autonomy, and need for relatedness and their relationships with autonomous motivation are universal. However, I was still curious about whether the indirect relationship between satisfaction of the three needs and IWB was contingent on context variable. Therefore, I included three cultural values (collectivism, uncertainty avoidance and power distance) that were measured at the individual level, as moderators. I checked the direct and indirect effects of satisfaction of the three basic psychological needs on IWB, as well as the moderating effects of collectivism, uncertainty avoidance and power distance. First, in according with the SDT, the three needs satisfactions were positively related to autonomous motivation respectively. Even though I did not include them in the hypotheses, I believe it is still meaningful to verify those relationships. Second, the results supported the positive direct relationship between autonomous motivation and IWB, which means autonomous motivation facilitates employees' IWB. Third, the positive indirect effects of satisfaction of the three needs on IWB through autonomous motivation were also supported. Last, through checking the effects of three culture values, I concluded that the power distance orientation moderated the positive effects of autonomous motivation on IWB, which also means that indirect effect of satisfaction of the three basic psychological needs on IWB was respectively contingent on the level of power distance.

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APPENDICES

Appendix A. Questionnaire— English Version

Information and consent to participate in a research study

You are being invited to participate in the research study mentioned above. This form provides information about what participating would mean. Please read it carefully before deciding if you want to participate or not. If there is anything you do not understand, or if you want more information, please do not hesitate to contact the researcher. E-mail: gaomengchan91@gmail.com.

This research is to study the employee's attitude towards their job and the relevant issues. If you participate, you will be asked to fill out the following questionnaire. In total, participating in this study should take about 7 minutes. There is no foreseeable risk or potential harms to participants in this study. If you provide your e-mail address, you will receive a report summarizing the results of this study.

As part of this research, we will gather information about certain personal characteristics (e.g., name, gender, age, tenure in the organization, department, job title and tenure with your supervisor. We will not allow anyone to access the information, except people directly involved in conducting the research, and except as described in this form. We will only use the information for the purposes of the research described in this form. We will protect the information by storing it in a highly secure cloud server. We intend to publish aggregated results of the research (it will not be possible to identify you in the published results).

You do not have to participate in this research. It is purely your decision. If you do participate, you can stop at any time. Within 15 days of participating, you can also ask that the information you provided not be used, and your choice will be respected. If you decide that you don't want us to use your information, email the researcher within 15 days following your participation and ask that the information you provided be removed from the study. There are no negative consequences for not participating, stopping in the middle, or asking us not to use your information.
We will not be able to offer you compensation if you are injured in this research. However, you are not waiving any legal right to compensation by signing this form.

I have read and understood this form. I have had the chance to ask questions and any questions

have been answered. By clicking on the “next” button, I agree to participate in this research under the conditions described. If you have questions about the scientific or scholarly aspects of this research, please contact the researcher. Her contact information is on page 1. You may also contact her faculty supervisor. If you have concerns about ethical issues in this research, please contact the Manager, Research Ethics, Concordia University, 514.848.2424 ex. 7481 or oor.ethics@concordia.ca.

Using the scale below, please indicate the extent to which you agree with each statement.

1----------2----------3----------4----------5
Strongly disagree disagree neural agree strongly agree

1. I often" do my own thing".
2. I am a unique individual
3. I enjoy being unique and different from others in many ways
4. Competition is the law of nature
5. I enjoy working in situations involving competition with others
6. The well-being of my co-workers is important to me
7. If a co-worker gets a prize, I would feel proud
8. I feel good when I cooperate with others
9. My happiness depends very much on the happiness of those around me
10. I would sacrifice an activity that I enjoy very much If my family did not approve of it
11. I would do what would please my family, even if I detested that activity
12. I usually sacrifice my self-interest for the benefit of my group
13. Children should feel honored if their parents receive a distinguished award
14. Without competition, it is not possible to have a good society
15. In most situations, managers should make decisions without consulting their subordinates
16. In work-related matters, managers have a right to expect obedience from their subordinates.
17. Employees who often question authority sometimes keep their managers from being effective
18. Once a top-level executive makes a decision, people working for the company should not question it
19. Employees should not express disagreements with their managers.
20. Managers should be able to make the right decisions without consulting with others.
21. Managers who let their employees participate in decisions lose power.
22. A company’s rules should not be broken–not even when the employee thinks it is in the

company's best interest.

23. It is important to have job requirements and instructions spelled out in detail so that employees always know what they are expected to do.
24. Rules and regulations are important because they inform employees what the organization expects of them.
25. Standard operating procedures are helpful to employees on the job.
26. Instructions for operations are important for employees on the job.

Using the scale below, please indicate to what degree the following statements correspond to one of the reasons for which you put efforts into your job?

1----------2----------3----------4----------5

Strongly disagree disagree neural agree strongly agree

27. Because I enjoy this work very much
28. Because I have fun doing my job.
29. For the moments of pleasure that this job brings me.
30. I chose this job because it allows me to reach my life goals.
31. Because this job fulfills my career plans.
32. Because this job fits my personal values.
33. Because I have to be the best in my job, I have to be a 'winner'.
34. Because my work is my life and I don't want to fail.
35. Because my reputation depends on it.
36. Because this job affords me a certain standard of living.
37. Because it allows me to make a lot of money.
38. I do this job for the pay check.

Using the scale below, please indicate how frequently you implement the behaviour mentioned in the following question.

1----------2----------3----------4----------5

Never always

39. How often do you pay attention to issues that are not part of your daily work.
40. How often do you wonder how things can be improved.
41. How often do you search out new working methods, techniques or instruments.
42. How often do you generate original solutions for problems.
43. How often do you find new approaches to execute tasks.
44. How often do you make important organizational members enthusiastic for innovative ideas.
45. How often do you attempt to convince people to support an innovative idea.

46. How often do you systematically introduce innovative ideas into work practices.
47. How often do you contribute to the implementation of new ideas.
48. How often do you put effort in the development of new things.

Using the scale below, please indicate the extent to which you agree with each statement.

1----------2----------3----------4----------5
Strongly disagree disagree neural agree strongly agree

49. I feel like I can be myself at my job
50. I really master my tasks at my job
51. I don't really feel connected with other people at my job (R)
52. At work, I often feel like I have to follow other people's commands (R)
53. I feel competent at my job
54. At work, I feel part of a group
55. If I could choose, I would do things at work differently (R)
56. I am good at the things I do in my job
57. I don't really mix with other people at my job (R)
58. The tasks I have to do at work are in line with what I really want to do
59. I have the feeling that I can even accomplish the most difficult tasks at work
60. At work, I can talk with people about things that really matter to me
61. I feel free to do my job the way I think it could best be done
62. I often feel alone when I am with my colleagues (R)
63. In my job, I feel forced to do things I do not want to do (R)
64. Some people I work with are close friends of mine

Personal information
1. name
2. gender
3. tenure in the organization
4. department
5. job title
6. tenure with your current supervisor

Appendix B. Questionnaire— Chinese Version

问卷说明和同意书

您现在被邀请参加此次调查。本部分介绍了参与调查的相关内容。请在决定参加与否之前仔细阅读本部分。如果有不明白的地方，或者需要获取更多的信息，请联系研究人员。邮箱为 gaomengchan91@gmail.com.

本调查是为了研究员工对于工作的态度及其相关问题。如果您决定参加，您将需要回答以下问题。总共需花费的时间大约为 7 分钟。参加此次调查不存在可预见的风险或者潜在的对您的伤害。如果您能提供您的邮箱地址，您将会收到一份本次调查结果的梗概。

作为本次调查的一部分，我们将会收集您的个人信息，包括您的姓名，年龄，性别，工作部门，职位，参加工作时间,与当前主管的共职时间。除了参与直接进行调查的人，其他人无法看到您的信息。所有的信息只用作本次调查研究。您的信息将会被储存在安全系数高的云端服务器里。我们最后会公布调差研究的结果，但是不会透漏您的个人信息。

你可以自由的选择是否参加本次调查，如果你决定参加，你也可以随时终止回答。在参加后的 15 天之内，您可以要求我们不使用您的信息。我们会尊重您的决定。如果你决定不希望我们使用您的信息，请在参与调查后的 15 天内电子邮件联系调查者，要求您的信息从本次调查中删除。拒绝参与调查、中途停止调查或者要求不使用您的信息都不会产生负面的结果。如果您在这次调查中感到伤害，我们将不能提供您补偿。然而在本页签字并不意味着您放弃了寻求补偿的合法权利。

我已经阅读并理解了此部分内容。我有机会询问问题，问题已经被解答。通过点击“下一步”按钮，我同意在上述条件下参加此次调查。

如果您有任何关于本调查的科学性和学术方面的问题，请联系调查者。联系信息在首页。您也可以联系研究者的监督人。

如果您对于本次研究道德方面事项有任何担心，请联系康考迪亚大学研究道德中心的管理人员。联系方式为 514.848.2424 ex. 7481 or oor.ethics@concordia.ca.

运用下面的量表，请表示您对下面各项表述的同意程度。

1----------2----------3----------4----------5

非常不同意 不同意 中性 同意 非常同意

1. 我常常做自己的事情

2. 我是一个独特的人

3. 在许多方面我都欣赏自己与众不同

4. 竞争是自然规律

5. 我喜欢可以与他人竞争的工作环境

6. 一起工作的同事的幸福对我而言很重要

7. 如果和我一起工作的同事得到嘉奖，我会感到自豪

8. 当与别人合作时，我感觉好

9. 我的快乐很大程度上取决于我周围人的快乐

10. 如果我的家人不赞成，我会放弃我很喜欢的活动

11. 如果能使我的家人愉快，即使是我很讨厌的活动我也会参与

12. 为了集体的利益，我常常牺牲自己的利益

13. 如果父母得到一次重大的嘉奖，孩子也应该感到很光荣

14. 在许多方面我都欣赏自己与众不同

15. 在大多数情况下，经理应该不用咨询他的下属而做出决定

16. 对与工作有关的事项，经理有权期望他的下属顺从

17. 经常质疑上层权力的雇员有时会影响她/他们经理的有效工作

18. 一旦高层行政人员作出了一个决定，公司的雇员不应该质疑它

19. 雇员不应该表达与他/她们经理之间的异议

20. 经理应该可以不需要咨询他人意见而做出正确的决定

21. 让雇员参与决策，经理的权力会被削弱

22. 公司的规定不应该被破坏（即使当雇员认为破坏规定是为了公司最好利益）

23. 把工作要求和指引清清楚楚的说出来是非常重要的，只有这样雇员才总是知道他们应该如何完成工作

24. 规定和条例是重要的，因为他们可以让雇员知道公司希望她们怎么做

25. 标准操作程序对在岗员工有帮助

26. 操作指导对于在岗雇员很重要

运用下面的量表，请表示您对下面各项关于你努力工作的原因的表述的同意程度

1----------2----------3----------4----------5

非常不同意　不同意　中性　　同意　　非常同意

我努力工作因为.....

27. 因为我非常喜欢这份工作

28. 因为干我的工作很有乐趣

29. 因为这份工作给我的快乐时刻

30. 因为它可以让我实现人生目标

31. 因为这份工作能满足我的职业规划

32. 因为这份工作符合我的个人价值

33. 因为我必须在我的工作中表现出色，因为我要成为“赢家”

34. 因为我的工作是我的生命，我不想失败

35. 因为我的声誉就靠它了

36. 因为这份工作能够让我保持一定的生活水准

37. 因为他可以让我赚很多的钱

38. 我做这份工作来获得薪酬支票

运用下面的量表，请表示以下的表述在你的日常工作中的频繁程度

1----------2----------3----------4----------5

从不总是

39. 你有多经常关注不属于你日常工作中的问题

40. 你有多经常会考虑如何提高工作中的事情

41. 你有多经常会寻求新的工作办法，工作技巧

42. 你有多经常会提出原创性的解决问题的方案

43. 你有多经常会寻找执行任务的新方法

44. 你有多经常会调动组织内部成员对创新想法的积极性

45. 你有多经常会尝试说服其他人支持一个创新的想法

46. 你有多经常会把创新想法系统的引入到工作中

47. 你有多经常会对新想法的实施做出贡献

48. 你有多经常会为新事物的发展做出努力

运用下面的量表，请表示您对下面各项表述的同意程度

1----------2----------3----------4----------5

非常不同意 不同意 中性 同意 非常同意

49. 我觉得我可以在工作中做我自己

50. 我真正地掌控了工作中的任务

51. 我并不感到在工作中和其他人有联系

52. 在工作中，我经常感到我必须要听从别人的命令

53. 在工作中，我感到我是胜任的

54. 在工作中，我觉得我是团队的一部分

55. 如果我可以选择，我会在工作中另辟蹊径

56. 我擅长我在工作中需要做的事

57. 我并不能真正的在工作中与其他人打成一片

58. 在工作中，我必须要完成的任务是和我真正想做的事情一致的

59. 我感到我可以在工作中完成最难的任务

60. 在工作中，我可以和别人谈论对我来说真正重要的事情

61. 我可以自由地用我认为最好的方法来工作

62. 我经常觉得和我的同事在一起也是孤单的

63. 在我的工作中，我感到我必须做我不想做的事情

64. 和我一起工作的人当中有些是我的密友

个人信息

姓名（name）

性别 (gender)

年龄 (age)

在本公司的任职时间 (tenure in the organization)

所在部门（department)

职位 (job title)

与目前你的直系主管一起工作了多久 (tenure with your supervisor)

Appendix C. T-test results

Group Statistics

	Group		Statistic	Bootstrap[a]			
				Bias	Std. Error	95% Confidence Interval	
						Lower	Upper
NEED_AUT	1	N	146				
		Mean	4.4087	-.0049	.0979	4.2134	4.6006
		Std. Deviation	1.16463	-.00258	.05582	1.05478	1.26923
		Std. Error Mean	.09639				
	2	N	138				
		Mean	4.4517	-.0023	.1004	4.2554	4.6558
		Std. Deviation	1.15702	-.00522	.06767	1.02308	1.28424
		Std. Error Mean	.09849				
NEED_COM	1	N	146				
		Mean	4.6147	-.0020	.0953	4.4249	4.8080
		Std. Deviation	1.14060	-.00934	.06301	1.00571	1.24561
		Std. Error Mean	.09440				
	2	N	138				
		Mean	4.5743	-.0019	.0962	4.3834	4.7560
		Std. Deviation	1.13440	-.00645	.06274	1.00569	1.25227
		Std. Error Mean	.09657				
NEED_REL	1	N	146				
		Mean	4.6735	-.0038	.0986	4.4607	4.8680
		Std. Deviation	1.17670	-.00904	.06135	1.04169	1.28659
		Std. Error Mean	.09738				
	2	N	138				
		Mean	4.4698	-.0025	.1028	4.2616	4.6735
		Std. Deviation	1.20003	-.00548	.06328	1.06939	1.31818
		Std. Error Mean	.10215				
PD	1	N	146				
		Mean	3.6849	-.0041	.0829	3.5207	3.8443
		Std. Deviation	.99430	-.00317	.04433	.90942	1.07972
		Std. Error Mean	.08229				
	2	N	138				
		Mean	3.5389	.0023	.0948	3.3522	3.7256

		Std. Deviation	1.14233	-.00668	.04549	1.04801	1.22356
		Std. Error Mean	.09724				
UA	1	N	146				
		Mean	4.5137	-.0044	.1166	4.2861	4.7462
		Std. Deviation	1.44490	-.00915	.05565	1.32143	1.54293
		Std. Error Mean	.11958				
	2	N	138				
		Mean	4.2518	.0002	.1153	4.0339	4.4737
		Std. Deviation	1.33745	-.01061	.06188	1.19907	1.44721
		Std. Error Mean	.11385				