Transformational leadership and innovative work behavior

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Abstract
Purpose – The purpose of this paper is to explore the mediating role of psychological empowerment and the moderating role of self-construal (independent and interdependent) on the relationship between transformational leadership and employees’ innovative work behavior (IWB).

Design/methodology/approach – A total of 639 followers and 87 leaders filled out questionnaires from cross-industry sample of five most innovative companies of China. Structural equation modeling was used to analyze the relations.

Findings – Results revealed that psychological empowerment mediated the relationship between transformational leadership and IWB. The research established that transformational leadership positively influences IWB which includes idea generation as well as idea implementation. The results also showed that the relationship between transformational leadership and IWB was stronger among employees with a higher interdependent self-construal and a lower independent self-construal.

Originality/value – This study adds to IWB literature by empirically testing the moderating role of self-construal and the mediating role of psychological empowerment on transformational leadership-IWB link.

Keywords Transformational leadership, Self-construal, Psychological empowerment, Innovative work behaviour

Introduction
In today’s highly competitive and technologically advanced world, innovation plays a critical role (Smith and Tushman, 2005). Innovation by employees is one of the best ways to foster innovation and organizational success (Mytelka and Smith, 2002; Van de Ven, 1986). To motivate employees to innovate in intense knowledge-based work contexts, the role of managers as leaders has received attention of researchers and practitioners. Thus researchers have found increasing interest in discovering ways to persuade employees at individual levels to display creative behaviors through transformational leadership (Piccolo and Colquitt, 2006; Podsakoff et al., 2003; Wang et al., 2005). However, how transformational leaders affect innovative work behaviors (IWBs) of employees has not been adequately researched (Gong et al., 2009; Jung et al., 2003). While researchers have studied the relation between individual perceptions of transformational leadership and employees’ creativity, which is first stage of innovation (Hyypia and Parjanen, 2013; Malloch, 2014), minimal attention has been given to the effect of transformational leadership on employees’ IWB.

A review of leadership-innovation literature reveals two issues. First, the lack of systematic attention to the impact of transformational leadership on employee’s IWB is especially surprising given that ideas are useless unless used (Levitt, 1963) and that employee’s innovation, particularly in knowledge-intensive contexts, is widely recognized as being critical to the growth and competitiveness of organizations.
(Fiol, 1996; Shipton et al., 2006). An individual's perception of supervisors' transformational leadership is closely related to his/her desired outcomes (e.g. Braun et al., 2013; Chun et al., 2009; Liu et al., 2011). Second, it is very critical to understand follower's psychological processes which translate leader behavior into follower action (Van Knippenberg et al., 2004). This study will help to understand the role of follower psychological empowerment and self-concept and identity on the relationship between transformational leadership and IWB.

Employees’ IWB refers to the development and initiation of novel and useful ideas and implementing these ideas into new and improved products, services or ways of doing things (Baer, 2012; Kanter, 1988; van de Ven, 1986). This is in line with previous research, which differentiated between idea generation phase and idea implementation phase and combined these two phases in one construct named innovation behavior (Baer, 2012; Baer and Frese, 2003; Scott and Bruce, 1998; Somech and Drach-Zahavy, 2013).

Clearly, there is a need to understand the mechanisms and processes through which transformational leaders influence creativity enhancement behavior of their subordinates (Bass, 1999). Some researchers believe that prior research has not investigated the impact of the influential processes of employee’s psychological mechanisms and self-concepts on transformational leadership-creativity linkage (Shalley et al., 2004; Shin and Zhou, 2003). One particularly promising psychological mechanism which may mediate the relationship between transformational leadership and creativity is psychological empowerment – an employee’s cognitive state characterized by increased intrinsic task motivation, perceptions of competence and self-determination to initiate and implement work behaviors (Deci et al., 1989).

Psychological empowerment is an individual’s perception of autonomy and power that he/she can instigate novel and innovative positive changes (Ramamoorthy et al., 2005). The possible mediation effect of PE in the relationship between transformational leadership and IWB is based on the importance of PE in predicting employee creativity (Zhang and Bartol, 2010). PE increases creative process engagement and intrinsic motivation (Thomas and Velthouse, 1990; Zhang and Bartol, 2010). Since creativity is an essential element of IWB, therefore we propose that PE is likely to impact TL-IWB linkage.

Bass (1999) emphasized that since transformational leaders inspire and motivate employees to display positive work behaviors, psychological empowerment which is a motivational construct mediates the effects of transformational leadership on employee’s work outcomes. Hennessey and Amabile (2010) further confirmed that employee’s intrinsic motivational state created through psychological empowerment by managers is pivotal for creative tasks and IWB. Many researchers used psychological empowerment as a mediator to determine the impact of transformational leadership on various employee attitudes such as organizational commitment (Avolio et al., 2004), job satisfaction (Barroso Castro et al., 2008; Seibert et al., 2011), workplace aggression (Hepworth and Towler, 2004) and motivation (Epitropaki and Martin, 2005; Maynard et al., 2012). However, there is a paucity of research on the analysis of mediating effects of psychological empowerment on the relationship between transformational leadership and work outcome with respect to IWB. This research examines the effect of empowerment on IWB through transformational leadership.

Similarly, another psychological mechanism which has been found to impact the effect of transformational leadership on follower’s behavior is employee’s self-construal in terms of independent or interdependent relationship to others (Gabriel et al., 2007).
Self-construal is defined in terms of personalized characteristics and the extent to which individuals conceptualize themselves as separate and distinguished from others (the independent self-construal) or connected to their social context (the collective or interdependent self-construal). Transformational leadership motivates followers to surpass their own personal values and self-interest for the sake of the organization (Bass, 1985, p. 357; Jung, 2001).

Self-construal factors provide a general direction for organizational development and act as guidelines, while transformational leadership provides motivation to drive organizations to achieve their goals and represent action plans. Just as guidelines and action plans are important to understand functioning of an organization, similarly to understand how employees behave at the workplace, we need to understand individual's self-concepts and motivational mechanisms through transformational leadership (Hardin et al., 2004). An individual's perceptions about identity and self-concept tailored by social interactions and social structures profoundly affect his/her way of thinking, feeling and behaving in organization (for overviews, see Haslam et al., 2003; Kihlstrom et al., 2003; Leary and Tangney, 2003; Lord and Brown, 2004; Markus and Kitayama, 1991). Follower's self-construal may result in different behaviors and responses to leadership effectiveness (Van Knippenberg et al., 2004). Therefore, it is very likely that the self-construal may moderate the effect of transformational leadership on IWB.

Results linking employee's self-construal in shaping attitudes and behavior toward creativity have been more complex and inconclusive (Leary and Tangney, 2003, p. 471). Lord et al. (1999) and Lord and Brown (2004) have proposed that transactional leadership is more effective when follower independent self-construal is salient, whereas transformational leadership should be more effective when follower collective or interdependent self-construal is salient. Hogg and Martin (2003) proposed that individualized consideration aspect of transformational leadership is less related to organizational identification and leadership effectiveness with stronger interdependent self-construal followers. An important question, however, is if and how independent self-construal and interdependent self-construal may moderate the impact of transformational leadership on IWB of followers.

Individuals with independent self-construal value separateness, uniqueness and primacy of personal goals, abilities, and preferences, but nevertheless work effectively in accomplishment of teams' objectives. Likewise, independent self-construal values personal success. Interdependent self-construal helps employees to socialize better with others, to be flexible, and to gain support for their creative ideas.

Employee’s perception of connectedness or separateness, when combined with the values and aspirations that transformational leaders provide, should enhance creativity (Bechtoldt et al., 2012). Our study gives an insight in to the role of individual's self-construal on the relationship between transformational leadership and individual's innovativeness in organizations. The current study addresses the call from Hogg and van Knippenberg (2003) and Denti and Hemlin (2012) to empirically test the moderating role of follower's self-construal on the relationship between transformational leadership and follower’s IWB.

The current study has three intended contributions to the theory of leadership and innovation. First, we examine the impact of transformational leadership on two distinct facets of employee's IWB, i.e. idea generation (employee creativity) and idea implementation (commercialization of creative ideas). Although a lot has been done on the relationship between transformational leadership and creativity, but a little is known about its impact on generating new idea and then converting that idea in to a
realization simultaneously. Second, we investigate how employee’s psychological empowerment mediates the effect of transformational leadership on IWB. Third, we explore the moderating role of employee’s self-construal (i.e. independent and interdependent self-construal), on the relationship between transformational leadership and IWB. We test the assumption that when employee’s interdependent self-construal is high and independent self-construal is low, the relationship between transformational leadership and IWB is likely to be stronger.

**Theoretical framework**

**IWB**

IWB is recognition of problems and initiation and intentional introduction of new and useful ideas, as well as set of behaviors needed to develop, launch and implement ideas with an aim to enhance personal and/or business performance (De Jong and Den Hartog, 2007; Farr and Ford, 1990). IWB differs from employee creativity which focuses on the discovery and generation of ideas (King and Anderson, 2002). Mumford and Gustafson (1988) described creativity as the process of initiating novel, new and useful ideas, whereas IWB encompasses set of activities aimed at recognition, development, modification, adoption and implementation of ideas (Scott and Bruce, 1994; Van de Ven, 1986).

Unlike creativity, IWB has a clearer applied component and is expected to produce some kind of innovative output and benefit. However, to delve into creativity literature is relevant as it is a part of first phase of innovative behavior, where employees recognize potential problems or performance gaps and initiate ideas in response to a perceived need for innovation (West, 2002).

IWB has also been found broader than proactiveness constructs such as proactive work behavior (Parker et al., 2006) and personal initiative (Frese et al., 1996), which focus on individual’s inclination to implement ideas proactively, but are unable to capture idea generation part of innovation process.

**Transformational leadership**

According to Burns (1978), transformational leaders inspire followers through articulating an energizing vision and challenging goals and leaders and followers make each other to advance to a higher level of morality and motivation. Bass (1985, 1991) extended the work of Burns (1978) by explaining the leader’s effect in creating valuable and positive change in the followers and introduced four dimensions of transformational leadership. Idealized influence is defined as the capability to act as a role model whereby the leader becomes admired, respected and trusted. Intellectual stimulation is the leader’s ability to arouse within followers to question decisions and tackle challenging tasks. Individualized consideration is about giving personal attention to follower’s differences and personal growth, and linking needs of followers to the organizational mission through continuous coaching and feedback. Inspirational motivation involves encouraging followers to believe in their ability to achieve exciting vision by inspiring and motivating them.

**Psychological empowerment**

There are a number of ways in which an individual’s empowerment can be defined. Academicians and industry experts have long been inspired with the idea of employee empowerment (Shalley et al., 2004). Psychological empowerment has received considerable attention in the field of organizational science (Conger and Kanungo, 1988; Thomas and Velthouse, 1990). Spreitzer (1995) developed a measurement of
psychological empowerment for the workplace. Depending up on the nature of relationships to be studied, some researchers viewed empowerment from structural and social perspective which focussed upon increasing individual decision-making power, while others emphasized on the cognitive or psychological perspectives of empowerment which are related to individual perceptions about power in the organization and the psychological states (Liden et al., 2000). The current study focusses on employee’s cognitive or psychological perceptions of empowerment.

Thomas and Velthouse (1990) and Spreitzer (1995) described psychological empowerment as a motivational construct having four cognitions: meaning, competence, impact and self-determination. Meaning is the value an individual place on a work role based on his/her ideals or standards (Thomas and Velthouse, 1990). Competence is the feelings of self-efficacy or effort-performance expectancy which drive one to believe about his/her capability to perform activities with skill (Bandura, 1989). Impact is the degree to which an individual can influence organizational outcomes (Ashforth and Mael, 1989); while self-determination is autonomy in initiation of work behaviors and making decisions about work (Deci et al., 1989). These four cognitive dimensions comprise the basic essence of psychological empowerment in the workplace (Houghton and Yoho, 2005).

**Self-construal**

The idea of self-construal was introduced by Markus and Kitayama in 1991 to conceptualize the cultural differences between individualism and collectivism at the individual level. Self-construal is individual level of cultural variability whereas individualism/collectivism is national level of cultural difference (Li et al., 2013; Brewer and Chen, 2007). Self-construal is defined by Markus and Kitayama (1991) as a “constellation of perceptions, feelings, and actions concerning the extent in which the self is defined independently of others or interdependently with others.” They proposed that independent and interdependent self-construal are personality traits which coexist in individuals and shape their behaviors.

Interdependent self-construal is focussed on flexible interpersonal relationships, one’s sense of embeddedness and connectedness with others, primacy of organizational and group goals over personal goals, maintenance of group harmony, and understanding work role within group (Mael and Ashforth, 1995). Those with an interdependent self-construal are concerned with enacting appropriate behaviors, fostering harmony with others, expressing social similarities and fitting in with organizational goals. The focus is on duties, obligations and harmonious social responsibilities (Cristina-Corina, 2012). The malleable nature of interdependent self-construal makes it highly responsive to situational priming (Singelis, 1994).

Whereas, the independent self-construal is characterized by unique personal attributes, preferences, traits and abilities which help to distinguish one from others (Markus and Kitayama, 1991; Singelis, 1994). They value personal goals as more important than organizational and group’s goals (Andersen and Chen, 2002). People who emphasize their independent self-view themselves as autonomous and invariant across social contexts (Kanagawa et al., 2001, p. 59). Their behavior stems from internal feelings and thoughts of self-promotion and separateness from interpersonal context. Independent self-construal focusses on development and expression of one’s unique distinctive values, attributes and preferences (Markus and Kitayama, 1991; Singelis, 1994).

Self-construal is not unidimensional and is represented as a set of categories, each of which is distinct and dynamic (Showers and Zeigler-Hill, 2003; Stets and Burke, 2003),
and may vary across situations, group memberships, relationships and time (Hogg, 2003; Sedikides and Brewer, 2001). The two dimensions of self-construal can be empirically categorized into two orthogonal dimensions (e.g. Gudykunst et al., 1996; Singelis, 1994). Although, followers may have many distinct selves, only one of them tends to be salient or activated in any specific social context depending on role relationships (Van Knippenberg et al., 2004).

**Transformational leadership and IWB**. There is paucity of research on the specific relationship between transformational leadership and IWB (Janssen, 2004). A number of reasons are proposed to support the assumption that transformational leadership positively influences IWB. Burns (1978), Bass (1985) and Avolio and Bass (1995), suggest that transformational leadership is imbued with inspirational motivation, collective sense of mission, self-confidence, heightened awareness of goals, exciting vision and aspiration. These aspects of transformational leadership arouse intellectual stimulation, intrinsic motivation, support for innovation and employee creativity (Eisenbeiss et al., 2008; Elkins and Keller, 2003; Gumusluoglu and Ilsev, 2009; Pieterse et al., 2010; Sarros et al., 2008; Tipu et al., 2012); which closely match with antecedents stimulating innovative behavior among employees.

Research shows that transformational leaders increase organizational innovation (Gumusluoglu and Ilsev, 2009; Jung et al., 2003; Jung et al., 2008) and entrepreneurial intentions of employees (Pieterse et al., 2010), due to high-performance expectations from employees. According to Dvir et al. (2002), transformational leaders ensure that individuals challenge the status quo and are stimulated intellectually by transcending their own self-gain for a higher collective gain. Transformational leaders develop energizing goals, vision and values; inspire followers to pursue entrepreneurial intentions to influence their creative behaviors. In line with the social exchange perspective (Blau, 1964, p. 566), leader’s individualized consideration encourages employees to reciprocate with greater creativity and innovativeness. By giving inspirational motivation to employees to transform existing systems and plan new ways to address problems helps them to display behaviors focussed on crafting new ways of doing things. Transformational leader with idealized influence exhibits optimism and excitement about novel perspectives and this “championing role” enhances organizational innovation through intellectual stimulation (Elkins and Keller, 2003). This heightened level of intellectual stimulation is likely to increase exploratory thinking and IWB.

IWB requires employees to have a high need for achievement and low need for conformance which is facilitated by transformational leaders. Transformational leaders take risks to try new ways of working, change existing processes and systems for long-term benefits, and help followers to think about exploiting opportunities effectively (Pearce and Ensley, 2004). Sosik (1997) argued that transformational leaders inspire employees to display creative endeavors and increase their problem-solving and analytical abilities. Transformational leaders help followers to strive for more difficult and challenging goals by changing follower’s propensity for creative perspectives (Whittington et al., 2004). They provide personal as well as collective value system, access to resources and information, effective communication, self-confidence and inner direction. When followers’ individual needs and expectations are considered, they tend to reciprocate by exploring new opportunities with a better focus on important organizational issues and processes. Transformational leaders help to balance short-term goals with opportunity exploitation and motivate employees to take risks associated with trying out new processes.
They foster IWB by motivating employees to strive for collective goals (Basadur, 2004; Krause, 2004; Majumdar and Ray, 2011), and encourage individuals’ learning and help them to socialize more to find support for their ideas’ implementation (Gong et al., 2009; Kahai et al., 2003; Ramamoorthy et al., 2005). Thus, transformational leadership influences employees’ idea promotion and idea implementation by encouraging them to think out of the box solutions by providing intellectual stimulation, consoling strong social ties among co-workers, involving them more and more into their jobs and organizations, catering to their intrinsic motivation and considering their needs for development and recognition (Tierney and Farmer, 2002; Walumbwa and Lawler, 2003). Therefore, we hypothesize that:

H1. Transformational leadership is directly and positively related to employees’ IWB.

H1a. Transformational leadership is directly and positively related to idea generation.

H1b. Transformational leadership is directly and positively related to idea implementation.

Transformational leadership and psychological empowerment. Garcia-Morales et al. (2008) and Jung et al. (2003) indicate that transformational leadership has significant and positive relations with both empowerment and innovation. Transformational leaders often emphasize on cooperation, collective task accomplishment, learning by sharing experiences, control and freedom in decision making, and delegating authority to execute ideas which fosters employee’s participation in the idea generation and implementation (Daft, 2001). Thus, transformational leadership builds a work environment in which employees feel motivated, competent and self-managed to experience internal empowerment (Özaralli, 2003). It focuses on small power distance and needs and capabilities basis of individuals (Zohar and Tenne-Gazit, 2008).

Transformational leaders delegate authority, and encourage participative decision making, making employees feel empowered to carry out tasks with high degree of collective identity and cohesiveness (Jung and Sosik, 2002). They quite often change organizational processes and systems to achieve exciting future; delegate authority to employees to come forward and accept responsibility; and seek them to a higher level of commitment by providing flexibility to make decisions about their work contexts. By giving personal consideration to employees, and helping them toward realization and evolution of their goals, transformational leaders are able to empower them psychologically. In view of the preceding discussion, the following hypothesis is proposed:

H2. Transformational leadership is positively related to employees’ psychological empowerment.

Psychological empowerment and IWB

When employees are empowered in organizations, they exhibit creative behaviors because they find worth in their work roles (Jung et al., 2003). Transformational leaders create an environment without direct supervision or intervention, which is conducive to IWB (Wat and Shaffer, 2005; Houghton and Yoho, 2005). Employees who are psychologically empowered feel good about the tasks they are doing and perceive them
to be meaningful and challenging. Thus, psychologically empowered employee displays creative behaviors by aligning personal goals with organizational goals (Jha, 2014).

When employees feel that they have personal decision-making control, ability to influence others, freedom, flexibility, meaning of the work, inspiration to achieve an envisioned attractive future, they tend to produce more creative endeavors to enhance job performance (Kendall et al., 1999). Employees who feel empowered and find meaning in their work, are more likely to be motivated intrinsically to have an impact on the organization, which in turn promotes IWB and task accomplishment (Berg and Hallberg, 1999; Krishnan, 2009; Jung and Sosik, 2002; Laschinger et al., 2004).

Conger and Kanungo (1988) suggested that PE stimulates change, and IWBs are change oriented by definition. Most generally, PE increases intrinsic task motivation, individual flexibility and self-determination over job execution making individuals less constrained about rule-bound aspects and allow them to contribute to innovative behaviors (Ryan and Deci, 2000). Such an employee explores new cognitive pathways and is playful with ideas (Amabile et al., 1996).

In view of the above discussion, the following hypothesis is proposed:

**H3.** Employee’s psychological empowerment is positively related to his/her IWB.

The mediating role of psychological empowerment

Bass (1999) emphasized psychological empowerment as a probable enhancer of transformational leadership effects and found that transformational leadership acts through empowerment to influence individual’s work outcome. Psychological empowerment explains the relationships between transformational leadership and employee job-related behaviors by providing comprehensive motivational mechanism (Walsh et al., 2014; Joo and Lim, 2013; Krishnan, 2012; Dust et al., 2014).

Employees inspired by transformational leaders feel psychologically empowered because they understand the organization’s expectations from them and are better equipped to match their skills and behaviors to these demands, performance outcomes and expectations. They have a higher sense of mastery, and self-efficacy over their tasks and work environments. Providing employees with greater autonomy and decision-making control results in employees who are more likely to reciprocate with higher levels of creative process engagement (Volmer et al., 2012; Zhang and Bartol, 2010).

Transformational leaders encourage knowledge diffusion (Harborne and Johne, 2003), assign challenging tasks (De Jong and Den Hartog, 2007), arouse intellectual stimulation (Jung et al., 2003), all of which are related positively to creativity and IWB. This style of leadership prepares employees to take more responsibility and enhances beliefs about their capabilities to perform activities and accomplish tasks with novelty and creativity (Garcia-Morales et al., 2008; Hughes et al., 1999). Such leaders pay close attention to their employees’ sense of accomplishment which is expected to enhance employees’ innovativeness. The results of Dvir et al., (2002), Zhou (1998), Chen and Aryee (2007), Parker and Axtell (2001) and Tierney and Farmer (2004) showed that employees exhibited creativity and innovativeness when they worked in high-task autonomy working environment with frequent consultation, self-direction and control, and delegation. Based on the above arguments, we hypothesize that:

**H4.** Psychological empowerment mediates the relationship between transformational leadership and employees’ IWB.
In a meta-analysis by Oyserman and Lee (2008), it was found that self-construal dimensions varied from culture to culture; individuals in Asian cultures prefer group goals over their individual goals whereas American and Western cultures exhibited more independent self-construal by counting on their own personal attributes, abilities and traits. Individuals within a given culture do vary along these two dimensions in developing social ties within organizations and community (Sharkey and Singelis, 1995). Thus, a highly independent self-maintains personal distinctiveness from others, is individualistic, tries to accomplish tasks independently and expects his/her work role to be explicit in organizational processes (Brewer and Chen, 2007). On the other hand, a highly interdependent employee looks for strong social ties by embedding in groups, works well in teams, regards group memberships as more self-defining, prefers team and organizational goals over his/her personal goals and accomplishments (Neff et al., 2008).

Most commonly an individual’s self-construal corresponds to the values of their society. People in collectivist cultures tend to be higher in interdependent self-construal; people in individualist cultures tend to be higher in independent self-construal (Markus and Kitayama, 2003). But self-construal is different than culture or collectivism, because it refers to the degree to which the individual, rather than the group, views the self (Markus and Kitayama, 1991).

Self-construal has been proposed to be a moderator of leadership processes (van Knippenberg and Hogg, 2003). A number of studies support this argument for the moderating role of self-construal on leadership effectiveness in shaping positive attitudes and behaviors (De Cremer and Van Vugt, 2002; Hains et al., 1997; Lord and Brown, 2004; Platow and van Knippenberg, 2001). Hogg and van Knippenberg (2003) argue that personalized leadership is more effective for subordinates who value independent self-construal and self-identities. On the other hand, those followers who value social identity, self-definition in collective terms and interdependent self-construal show positive behaviors under more depersonalized leadership (Voyer and McIntosh, 2013).

Lord and Brown (2004) and Martin and Epitropaki (2001) have proposed that transformational leadership, with its appeal to the collective self, should be more effective when follower collective self is salient. Transformational leaders make employees more confident and strengthen their creative self-concepts (Henker et al., 2014). Lu et al. (2001) suggested that highly independent self-employees are high on self-esteem; high self-esteem employees trust their own judgment, do not feel guilty when others oppose their ideas, and voice discontent quite rigorously. On the contrary, sense of obligation, relatedness to others, seeking support from other group members, strong social ties and group loyalty are core attribute of interdependent self-individual. Utz (2004) found that interdependent self-construal individuals showed higher levels of cooperation, social interaction and concern for group’s outcomes. As people with high interdependent self-construal tend to develop support through better communication to their problem-solving ideas and understand the organizational need for continuous innovation because of primacy of organizational goals (Oyserman et al., 2002), so it is more likely that they display higher levels of IWB.

Strong interdependent self-construal engages in behaviors that ask for support and self-esteem (Baker and McNulty, 2013). Brockner et al. (2005) suggested that employees high in interdependent social construal reacted strongly to procedural fairness which in turn positively influences extra-role behavior. Independent self-construal individuals interact less frequently with other members of the organization which hinders
idea implementation because one has to build consensus to carry out novel ideas. Brewer (1991) suggested that employees in Asian cultures with perceptions of personal distinctiveness are less entrepreneurial as they prefer their own goals and aspirations, do not initiate new and novel ideas too often, and are reluctant to bring any change in the organization as it requires seeking social support. Thus, employee high in independent construal is likely to weaken the effect of transformational leadership on IWB.

Employees with higher interdependent self-prefer social identity, and group harmony. Transformational leadership essentially stimulates intellectual abilities of employees by aligning personal values with organizational values, and may serve as a basis for highly interdependent employees to think creatively. Highly interdependent individuals due to high level of trust and strong social networks and person-group fit will easily persuade co-workers to support their ideas and implement them, as compared to those who are highly independent. Because of collective goal setting, they better understand organizational expectations and initiate ideas which are aligned with organization’s aspirations and are close to group preferences. Thus, other members of group comprehend such ideas easily and are ready to implement them with full motivation and dedication. Employees with lower independent self do not regard personal distinctiveness as important, and are embedded in to groups. They value group goals to achieve personal identity. As a result of personal consideration, and inspirational motivation provided by transformational leaders, such employees will more likely articulate challenging future for organization and engender IWBs.

Based on the above arguments, it is hypothesized that:

**H5a.** Interdependent self-construal moderates the relationship between transformational leadership and IWB such that transformational leadership engenders IWB for employees with higher level of interdependent self-construal.

**H5b.** Independent self-construal moderates the relation between transformational leadership and IWB such that transformational leadership engenders IWB for employees with lower level of independent self-construal (Figure 1).

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**Notes:** Direct effect ————- Moderating effect

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**Figure 1.** Overview of the relationships of the study variables
Research method

Participants and procedures

The sample of our study was drawn from employees and their leaders by using a cross-sectional survey. The respondents were from five most innovative companies of China according to Forbes 2013 ranking. We collected data from multiple industries for better and deeper understanding of the relationship structure among transformational leadership, psychological empowerment, self-construal and IWB. The reasons to select these industries are: first, employees in these industries work in a tumultuous environment and the leaders face intense competitive pressure due to frequent entries and exits of firms (Afuah, 2003); second, all the selected organizations experienced some sort of organizational changes, restructuring and transformation which provided us an opportunity to test ideally the relationship among the studied constructs; third, the selected firms are the top rated organizations in the market in terms of innovation (Table I).

The anonymity and confidentiality of this survey was ensured to employees. We started by fixing appointments with top-level managers of these organizations. A request was made to managers of participating organizations to announce the purpose of the survey to their employees which is related to a delicate subject, i.e. leadership. Following the procedures of Brislin (1980), a back translation approach was adopted. Two bilingual researchers, who were familiar with conducting research in China on human resource management, were hired to conduct the back translation. The original questionnaire was first translated from English into the Chinese by one researcher and then translated back into English by another independent researcher, to check for discrepancies in meaning. Consequently, several items were modified to reflect local context and for better clarity, incorporating the feedback from the respondents. To determine the internal consistency of our constructs we used factor analysis and Cronbach’s $\alpha$ to test unidimensionality and inter-item reliability. We conducted a pilot study in order to verify to what extent the questionnaire satisfied the requirements and constraints. We discussed the pilot questionnaire with four professors, one top-level manager in each company and two subordinates suggested by top-level managers. Next, we tested the questionnaire among nine managers and 36 employees, respectively, asking each of them to provide us with comments and suggestions for improvements.

Our respondents were subordinates and their direct supervisors mainly from Marketing, Administration and HR, Operations and Customer Care and IT departments of these companies. Respondents varied in hierarchical position and level of experience. The study included employees and their direct leaders. Questionnaires were provided to employees who agreed to participate. Employees completed a questionnaire on their perceptions of psychological empowerment, leader behaviors and self-construal.

<table>
<thead>
<tr>
<th>Company name</th>
<th>Industry</th>
<th>Headquarters</th>
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<tbody>
<tr>
<td>Baidu</td>
<td>Computer services</td>
<td>Beijing</td>
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<tr>
<td>Henan Shuanghui Investment</td>
<td>Food processing</td>
<td>Luohe, Henan</td>
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<tr>
<td>Tencent Holdings</td>
<td>Computer services</td>
<td>Shenzhen, Guangdong</td>
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<tr>
<td>Kweichow Moutai</td>
<td>Beverages</td>
<td>Renhuai, Guizhou</td>
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<tr>
<td>China Oilfield Services</td>
<td>Oil services and equipment</td>
<td>Langfang, HEB</td>
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Table I.
Top five innovative companies of China

Source: Forbes 2013 world’s most innovative companies
Leaders provided ratings for each of their subordinates’ IWB. Rather than sending our questionnaire to all employees, we drew a stratified sample to ensure equal (or at least comparable) representation of the five companies.

We employed five research assistants, one for each company. Almost 100 questionnaires were distributed among subordinates of Marketing, and Administration and HR departments in each company and were collected three weeks later. We requested IT department heads to provide us e-mail listing of employees and leaders from IT, and Operations and Customer Care departments. E-mails were sent to a random sample of 550 employees and their leaders. The questionnaires included company and employee identification codes so that data collected from the leaders and employees could be matched and grouped for analysis. Of the 1,100 surveys distributed to subordinates, 749 surveys were returned, for a response rate of 68 percent. Of those 749 surveys, matching supervisory surveys (a supervisor rated a subordinate who had also turned in a survey) were returned for 639 individuals.

The demographics of respondents suggested that 67 percent of them were male, 19 percent were employed in Baidu, 21 percent in Henan Shuanghui Investment, 15 percent in Tencent Holdings, 26 percent in Kweichow Moutai and 19 percent in China Oilfield Services. We distributed questionnaires to the leaders of each company to rate the frequency of their subordinates’ IWB. Totally, 20 supervisors were selected from each company. Out of 120 leaders, 87 participated, with a response rate of 79 percent, thus usable matched data consisted of six subordinates’ ratings per supervisor, on average. The average span of control of each supervisor was approximately seven to eight. The average age of respondents was 36.3 years with a standard deviation of 6.24. The average tenure with the organization was 4.67 years with a standard deviation of 3.55 years. By using dyadic approach (leaders and their subordinates), different sources of data collection reduced potential for common method variance bias (Podsakoff et al., 2003).

**Measurement**

**Transformational leadership.** A 20 items scale was taken from Multifactor Leadership Questionnaire Form 5X to measure transformational leadership, including idealized behaviors, idealized attributes, inspirational motivation, intellectual stimulation and individualized consideration (Bass and Avolio, 1997). We converted these scales into one higher-order factor which is consistent with recent empirical (Avolio et al., 2004; Bono and Judge, 2003) and theoretical developments (Bass, 1999) of transformational leadership. The employees were asked to rate the frequency with which their direct leaders displayed different behaviors, on a five-point Likert type scale ranging from 1 (not at all) to 5 (frequently, if not always). Sample item: “My leader talks optimistically about the future.” The fit indexes for four first-order factors plus one second-order factor fell within an acceptable range ($\chi^2[50] = 217.8; p < 0.05; CFI = 0.97; GFI = 0.96; SRMR = 0.06; RMSEA = 0.08$), supporting the notion that the dimensions are distinct, but also collectively represent an overall construct.

**Psychological empowerment.** The 12-item Empowerment at Work Scale, developed by Spreitzer (1995), using the four cognitive aspects of empowerment (meaning, competence, self-determination and impact) was used in this study. Employees were asked to rate the extent to which they believe they are empowered in their jobs on a seven-point scale (1-strongly disagree to 7-strongly agree). Sample item: “I have considerable opportunity for independence and freedom in how I do my job.” The fit indexes for four first-order factors plus one second-order factor fell within an
acceptable range ($\chi^2(50) = 193.6; \ p < 0.05; \ CFI = 0.96; \ GFI = 0.94; \ SRMR = 0.05; \ RMSEA = 0.08$), suggesting that the dimensions reflected the overall construct.

**Self-construal.** The 16-item scale measuring interdependent self-construal and independent self-construal was adopted from the studies by Gudykunst and Lee (2003). Respondents rated their preferences anchored on a seven-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). Eight items were used to measure respondents’ level of interdependent self-construal (e.g. “I will sacrifice my self-interest for the benefit of my group”; $\alpha = 0.83$). Eight items were used to measure the respondent’s level of independent self-construal (e.g. “I enjoy being unique and different from others”; $\alpha = 0.81$).

**IWB.** The ten-item scale measuring IWB was adopted from the studies by De Jong and Den Hartog (2010). The leaders were asked to rate the frequency with which their subordinates displayed different behaviors (e.g. “This employee pays attention to issues that are no part of his daily work.”) on five-point scale ranging from 1 (“never”) to 5 (“always”).

**Control variables.** Based on previous research, we controlled for several relevant demographic factors to better estimate the effect sizes of the hypothesized variables. In all our analyses, we included age, job tenure, gender, firm type and educational level as control variables. Job tenure, as years in the current job, has been found to be negatively related to innovative behavior (Shalley and Gilson, 2004; Pieterse et al., 2010). Prior studies have demonstrated that level of education (Amabile and Conti, 1999), industry type and gender (Ang et al., 2003), time spent with leader (Wang and Cheng, 2010) are potential predictors of IWB. We find that age is not related to innovative behavior. This is also in line with previous findings (Janssen, 2005).

**Data analysis and results**

**Common method variance**

Because all measurement scales were self-reported, we conducted two tests to examine the extent of method variance in the study. First, a Harmon one-factor test was conducted (Podsakoff and Organ, 1986). We specified a model using the five core variables of interest which indicated that common method effects did not contaminate the results of the current study. These results were confirmed by performing Widaman (1985) procedures to test for common method variance (Williams et al., 1989). In this approach a multifactor measurement model is tested, a model with a single method factor is tested, a measurement model with an additional method factor is tested, and a null model is examined. The results showed that method factor did not improve model fit and accounted for only a small portion (13 percent) of the total variance, which is less than method variance (25 percent) observed by Williams et al. (1989). The results of these tests suggest that common method variance is not a pervasive problem in this study.

**Confirmatory factor analysis (CFA)**

Because all measurement scales were self-reported, we took extra steps to examine the influence of common method bias in the study. To ensure that there was sufficient discriminant validity among constructs, we conducted CFA with transformational leadership, self-construal, psychological empowerment and IWB. We then evaluated model fit according to various fit indicators, including the $\chi^2$ goodness-of-fit test, non-normed fit index (NNFI) comparative fit index (CFI), and root mean square error of approximation (RMSEA). Hu and Bentler (1999) suggest that a value close to 0.95 is
reflective of good fit for NNFI and CFI, and RMSEA values close to 0.06 indicate reasonable model fit. In testing model for confirmatory factor analysis, all factor loadings except three items measuring transformational leadership were significant ($p < 0.001$). The test result of adaptability was $\chi^2 = 3078.19$, df = 953, $\chi^2$/df = 3.23, RMSEA = 0.072, NFI (normed t index) = 0.74, NNFI = 0.82 and CFI = 0.79, which was below the model adaptability standard suggested by Hair et al. (2006) ($\chi^2$/df < 3, RMSEA = 0.08, NFI = 0.90, NNFI = 0.90, CFI = 0.90: higher value indicates better fit). These values show that the model is not a good fit and needs to be amended.

We specified a model using the four core variables of interest and removed items with factor loading < 0.5 (Bagozzi and Yi, 1988) and cross-loadings of transformational leadership, self-construal, psychological empowerment and IWB. Only one item of independent self-construal namely “I feel comfortable using someone’s first name soon after I meet them, even when they are much older than I am” was removed. The results for the revised testing model were $\chi^2 = 2792.37$, $\chi^2$/df = 2.48, NNFI = 0.93, CFI = 0.95 and RMSEA = 0.083, indicating that the new model achieved an acceptable standard. Next, the traditional test of change in $\chi^2$ (James et al., 1982) was performed which showed that constraining the factor correlations among transformational leadership, self-construal, psychological empowerment and IWB significantly weakened model fit ($\chi^2$/df ranged from 82.57/1 to 310.53/1).

Descriptive analyses

Conceivable alternative models with fewer factors were also tested, but the results did not generate improved fit statistics. We compared the hypothesized model with alternative models to analyze whether the proposed model fits the data the best, but the results did not generate improved fit statistics for conceivable alternative models. Then, a nested model test was conducted, which compared three alternative models to our hypothesized model. The expected two-level measurement model had six latent factors (i.e. transformational leadership, psychological empowerment, independent self-construal, interdependent self-construal, idea generation and idea implementation) and provided an acceptable fit to the data $\chi^2 = 3052.19$, df = 953, CFI = 0.94, TLI = 0.94, $p < 0.01$, RMSEA = 0.073.

Table II presents means, standard deviations and correlations among the study variables. As expected, transformational leadership is significantly correlated with

<table>
<thead>
<tr>
<th>n = 726</th>
<th>Mean (SD)</th>
<th>Cronbach’s $\alpha$</th>
<th>Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Transformational leadership</td>
<td>4.27 (0.97)</td>
<td>0.831</td>
<td>1</td>
</tr>
<tr>
<td>2. Idea generation</td>
<td>4.21 (0.74)</td>
<td>0.725</td>
<td>0.475*</td>
</tr>
<tr>
<td>3. Idea implementation</td>
<td>4.12 (0.57)</td>
<td>0.774</td>
<td>0.577*</td>
</tr>
<tr>
<td>4. Psychological empowerment</td>
<td>4.04 (0.58)</td>
<td>0.783</td>
<td>0.429*</td>
</tr>
<tr>
<td>5. Interdependent self-construal</td>
<td>3.16 (0.45)</td>
<td>0.718</td>
<td>0.352*</td>
</tr>
<tr>
<td>6. Independent self-construal</td>
<td>3.01 (0.52)</td>
<td>0.735</td>
<td>-0.351*</td>
</tr>
</tbody>
</table>

Note: *$p$-value < 0.01
idea generation \((r = 0.475, \ p < 0.01)\), idea implementation \((r = 0.577, \ p < 0.01)\) and psychological empowerment \((r = 0.429, \ p < 0.01)\). Psychological empowerment is also significantly correlated with idea generation \((r = 0.519, \ p < 0.01)\) but it is not significantly correlated with idea implementation. Interdependent self-construal is also positively correlated with transformational leadership \((r = 0.352, \ p < 0.01)\) and idea implementation \((r = 0.204, \ p < 0.01)\) but employee’s collective self-construal did not correlate significantly with idea generation. Finally, independent self-construal is negatively correlated with transformational leadership \((r = -0.351, \ p < 0.01)\), idea implementation \((r = -0.18, \ p < 0.01)\) and idea generation \((r = -0.191, \ p < 0.01)\).

The structural model

Simultaneous maximum-likelihood-estimation procedures were utilized in order to examine the hypothesized relationships among transformational leadership, self-construal, psychological empowerment and IWB. We represented each latent construct with a single index that is equal to the average score on the construct scale. The structural equation model combines aspects of multiple regression and factor analysis to estimate a series of interrelated relationships among variables simultaneously (Hair et al., 2006). Table III shows the results for fit indices of direct, full mediation and partial mediation models. The difference \((\Delta \chi^2)\) between the Direct Effects Model and Full Mediation Model \(\chi^2\) is 254.57 \((2,093.18 - 1,838.31)\). Psychological empowerment full mediating role is confirmed if its introduction in the regression equation results in disappearance of the regression coefficient between transformational leadership and IWB. Similarly, the partial mediation of psychological empowerment is confirmed when the coefficient between predictor variable (transformational leadership) and outcome variable (IWB) remains significant but is reduced. The indices, GFI, CFI, NNFI and RMSEA indicated that the Full Mediation Model is better adaptable than the Direct Effects Model; the difference \(\Delta \chi^2\) of \(\chi^2\) is 254.87 \((2,093.18 - 1,838.31)\). The adaptability indices of the Partial Mediation Model were \(\chi^2/df = 1.80, \ GFI = 0.906, \ CFI = 0.927, \ NNFI = 0.958 \) and \(RMSEA = 0.048\) which demonstrated that partial mediation is more adaptable than full mediation showing that the Partial Mediation Model was a suitable model; the difference \(\Delta \chi^2\) of \(\chi^2\) is 132.10 \((1,838.31 - 1,706.21)\).

Table IV presents the results of the coefficients, \(t\)-values and goodness-of-fit statistics. The \(\chi^2\) statistic was significant; however, \(\chi^2/df\) was less than the cut-off point of 2 \((\chi^2 = 1,706.83, df = 943, \chi^2/df = 1.81 < 2)\). Other fit indices, including GFI (0.906), NNFI (0.958), RMSEA (0.048), 90 percent CI = 0.053-0.074, indicate that the proposed model is a reasonable explanation of observed covariance among the study constructs.

<table>
<thead>
<tr>
<th>Model</th>
<th>(\chi^2)</th>
<th>(\chi^2/df) ((&lt; 2))</th>
<th>(\Delta \chi^2)</th>
<th>GFI ((&gt; 0.9))</th>
<th>CFI ((&gt; 0.9))</th>
<th>NNFI ((&gt; 0.9))</th>
<th>RMSEA ((&lt; 0.08))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Effects Model</td>
<td>2,093.18 ((df = 948))</td>
<td>2.20</td>
<td>–</td>
<td>0.782</td>
<td>0.838</td>
<td>0.891</td>
<td>0.071</td>
</tr>
<tr>
<td>Full Mediation Model</td>
<td>1,838.31** ((df = 946))</td>
<td>1.94</td>
<td>254.87</td>
<td>0.856</td>
<td>0.895</td>
<td>0.917</td>
<td>0.063</td>
</tr>
<tr>
<td>Partial Mediation Model</td>
<td>1,706.21** ((df = 943))</td>
<td>1.80</td>
<td>132.10</td>
<td>0.906</td>
<td>0.927</td>
<td>0.958</td>
<td>0.048</td>
</tr>
</tbody>
</table>

Table III. Results for fit indices of structural models

Notes: \(\Delta \chi^2\) present differences between model and the following model. Fit indices criteria refers to Hair et al. (2006); **p-value < 0.001
In addition, the model achieved a satisfactory level of goodness of fit in predicting the variance of transformational leadership (57 percent) and IWB (41 percent). As expected, transformational leadership and psychological empowerment are two powerful predictors of idea generation (the coefficients were 0.68 and 0.51, respectively) as well as idea implementation (the coefficients were 0.72 and 0.59, respectively). The effect of transformational leadership on IWB was significant ($\beta = 0.41, p < 0.001$), supporting $H_1$. The effect of transformational leadership on idea generation and idea implementation were also significant ($\beta = 0.34, p < 0.001$ and $\beta = 0.29, p < 0.001$), supporting $H_{1a}$ and $H_{1b}$. The increased $R^2$ value (0.30, from 0.43 to 0.73) for idea generation and 0.34 in case of idea implementation, resulting from adding psychological empowerment in the equation is significantly large, indicating that PE is a mediating variable in linking transformational leadership with idea generation and idea implementation (Baron and Kenny, 1986).

According to Table V, transformational leadership featured significant path coefficient (TL→IWB: 0.26, $p < 0.05$) on idea generation. Similarly, positive and significant relationships existed between transformational leadership and psychological empowerment and innovative work behavior.
empowerment (TL → PE: 0.36, \( p < 0.001 \)), and psychological empowerment and idea generation (PE → IG: 0.47, \( p < 0.001 \)) as well as psychological empowerment and idea implementation (PE → II: 0.37, \( p < 0.01 \)). The study found that psychological empowerment was a partial mediator between transformational leadership and IWB. In addition, transformational leadership positively influenced idea generation (\( \beta = 0.25, \ p < 0.01 \)) and idea implementation (\( \beta = 0.19, \ p < 0.05 \)).

When indirect effect of psychological empowerment was included in the equation, the positive impacts of transformational leadership on idea generation 0.105(0.27 × 0.39), and idea implementation 0.083(0.27 × 0.31), reduced than the direct impacts (0.105 < 0.25), and (0.083 < 0.19), respectively. The study thus validated \( H4 \), that psychological empowerment was the partial mediation variable between transformational leadership and IWB. In addition, Sobel (1988) test was performed to test the significance of the mediation. The reduced effect size of transformational leadership (\( \beta = 0.49; \ p < 0.001 \) coupled with the significance of psychological empowerment (\( \beta = 0.41; \ p < 0.001 \)) implies that psychological empowerment partially mediates the relationship between transformational leadership and IWB. Thus psychological empowerment explained an additional 13 percent of the variance in IWB, when compared to the effect of transformational leadership alone (Table VI).

Moderating effects of self-construal

To test \( H5a \) and \( H5b \), we flowed Aiken and West (1991) procedure by entering the main effect of transformational leadership as well as the interaction effects (transformational leadership × interdependent self-construal) on IWB. If the interaction paths are significant, moderator hypotheses are supported. A significant \( \beta \) coefficient for each interaction term (transformational leadership × interdependent self-construal, transformational leadership × independent self-construal) or values of the incremental \( F \)-statistic indicate that the moderator variable (interdependent self-construal and independent self-construal) acts as a moderator. We first entered control variables and then the main effects of transformational leadership, interdependent self-construal and independent self-construal were entered along with the control variables. In last step, the interaction effects of interdependent self-construal and independent self-construal with transformational leadership were entered along with the control variables and the direct effects of interdependent self-construal, independent self-construal and transformational leadership.

When the control variables were entered, organizational tenure and time spent with the leader were related positively and significantly to IWB (\( t = 3.58, \ p < 0.01; t = 2.47, \ p < 0.001 \)). Next, Step 2 provided a significant increase in variance explained over Step 1 (\( \Delta \text{R}^2 = 0.16; \Delta F = 8.5, \ p < 0.001 \)). Interdependent self-construal was positively and significantly related to IWB (\( t = 4.26, \ p < 0.001 \)) and independent self-construal was related negatively and significantly to IWB (\( t = -2.14, \ p < 0.01 \)). \( H5a \) and \( H5b \) would exist if the interaction terms accounted for a significant incremental variance in explaining IWB either individually, manifested by beta values, or collectively, revealed

<table>
<thead>
<tr>
<th>Table VI.</th>
<th>The mediating effect of psychological empowerment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sobel test statistic</td>
</tr>
<tr>
<td>Innovative work behavior</td>
<td>3.58****</td>
</tr>
</tbody>
</table>

Note: ****\( p < 0.001 \)
by the values of the incremental $F$-statistic. Step 3 provided a significant increase in variance explained over Step 2 ($\Delta R^2 = 0.19; \Delta F = 11.7, p < 0.001$).

The two-way interaction hypotheses ($H4$ and $H5$) were tested by observing the incremental variance explained by Step 3 over Step 2. As shown in Table V and VII, the addition of the interactions between transformational leadership, interdependent self-construal and independent self-construal explained 11 percent more variance for IWB in Step 3 over Step 2. More specifically, we found that the interaction between independent self-construal and transformational leadership was related negatively and significantly to IWB ($t = -5.68; p < 0.001$). Hence, $H5a$ was supported (Figure 2).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Step 1</th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Controls</td>
<td></td>
<td></td>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.134</td>
<td>1.74</td>
<td>0.092</td>
<td>1.56</td>
<td>0.092</td>
<td>1.62</td>
<td></td>
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</tr>
<tr>
<td>Tenure</td>
<td>0.274</td>
<td>3.58**</td>
<td>0.224</td>
<td>3.27***</td>
<td>0.227</td>
<td>3.34**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time with leader</td>
<td>0.195</td>
<td>2.47***</td>
<td>0.189</td>
<td>2.41***</td>
<td>0.189</td>
<td>2.43***</td>
<td></td>
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<tr>
<td>Firm type</td>
<td>0.068</td>
<td>5.72</td>
<td>0.061</td>
<td>4.97</td>
<td>0.059</td>
<td>4.99</td>
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<tr>
<td>Education level</td>
<td>0.18</td>
<td>2.11</td>
<td>0.15</td>
<td>2.31</td>
<td>0.16</td>
<td>2.28</td>
<td></td>
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<tr>
<td>Main effects</td>
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<td></td>
</tr>
<tr>
<td>Transformational leadership</td>
<td>0.247</td>
<td>7.85**</td>
<td>0.238</td>
<td>6.21**</td>
<td>0.238</td>
<td>6.21**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interdependent self construal</td>
<td>0.159</td>
<td>4.26***</td>
<td>0.137</td>
<td>4.11***</td>
<td>0.137</td>
<td>4.11***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent self construal</td>
<td>-0.121</td>
<td>-2.14**</td>
<td>-0.119</td>
<td>-2.07**</td>
<td>-0.119</td>
<td>-2.07**</td>
<td></td>
<td></td>
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<tr>
<td>Interactions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TL × ISC</td>
<td>0.213</td>
<td>3.26**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TL × INSC</td>
<td>-0.143</td>
<td>-5.68***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.23</td>
<td>0.39</td>
<td>0.58</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$F$</td>
<td>11.37***</td>
<td>13.5***</td>
<td>14.9***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta R^2$</td>
<td>0.16</td>
<td>0.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta F$</td>
<td>8.5***</td>
<td>11.7***</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Notes: **$p < 0.01$; ***$p < 0.001$
Discussion
The current study adds the moderating role of employee’s self-construal to the previous empirical research on transformational leadership-IWB linkage. The purpose was to examine the relationship between transformational leadership and IWB by focussing on psychological empowerment and self-construal (interdependent self-construal and independent self-construal). This study suggests three important conclusions. First, as shown in previous studies (e.g. Jung et al., 2003; Majumdar and Ray, 2011; Reuvers et al., 2008), we found a positive link between transformational leadership and IWB. Transformational leadership positively influences idea generation and employee’s creativity on one hand and idea implementation on the other. However, the positive effect of transformational leadership on idea generation is stronger than idea implementation. The path coefficient of 0.23 between transformational leadership and IWB is slightly less than path coefficients found in previous studies which were mostly carried in western contexts. This may be due to the individual and cultural differences, as employees in Asian context are more collectivists and prefer to work on goals set by the organization and the group instead of pursuing personal goals which inhibit out of the box solutions.

Second, employees’ psychological empowerment perceptions mediated the relationship between transformational leadership exhibited by leaders and IWB displayed by employees (Jung et al., 2003). Our results suggest that an employee displays innovativeness in his/her behavior due to differences in the feeling of empowerment, respect, autonomy, meaning, self-determination and competence while working with their leaders. Our findings confirm prior research (Avolio et al., 2004; Janssen and Van Yperen, 2004; Pieterse et al., 2010) that psychologically empowered employees reciprocate with higher levels of organizational creativity and IWB (Figure 3).

However, the influence of psychological empowerment on employee’s idea generation abilities is much stronger than his/her idea implementation abilities. This may be due to the fact that giving new and novel ideas encompasses more meaning, autonomy and self-determination to employees than convincing and implementing those ideas. Lastly, we found that employee’s definition of self-construal moderated the effect of transformational leadership on showing willingness to
innovate. The results provided evidence that the relation between transformational leadership and IWB was stronger among employees with a higher interdependent self-construal ($H5a$), whereas the relation between transformational leadership and IWB was weaker among employees with a higher independent self-construal ($H5b$).

**Theoretical implications**

Our findings help to understand deeper the drivers of IWB among employees through focus on empowered followers and the relationship they have with supervisors. Transformational leadership fosters employee's creativity as well as his/her ability to convince others to implement novel ideas. Transformational leaders give autonomy and freedom to employees by placing emphasis on the meaning and worth of work roles. They stimulate intellectual abilities of employees and inspire them to create opportunities to significantly impact their work roles, which leads to higher levels of IWB.

Self-construal which has been found to impact the relation between transformational leadership and employee's innovativeness is an additional contribution of this study. Our study collected leadership and IWB ratings from multiple industries and different departments within the same firm, increasing better understanding of the relationships among the studied constructs and reducing the potential effects of common methods and single source bias. Moreover, prior studies that have examined the impact of transformational leadership on employees' IWB have not tested for moderating effect of interdependent self-construal and independent self-construal. Self-construal has been found to moderate the impact of transformational leadership on innovativeness. The findings suggest that when a high-interdependent employee is inspired and motivated by a transformational leader, his/her preference to embed in to groups to promote the collective identity of the organization and primacy of organizational goals helps him/her to think and act creatively. IWB requires employees to find support for their ideas among co-workers, socialize in teams, understand group dynamics and intertwine with others. IWB is not only about generating solutions for problems and creating useful novel ideas but it's about incarnating ideas into realities and making them part of the organizational processes. Implementing ideas need support from teams, groups and organizations. On the contrary, employees with strong independent self-construal (preference for personal goals) weaken the relation between transformational leadership and IWB as they are unable to gather support for the idea implementation.

**Practical implications**

There are several practical implications that can be derived from our findings. It is practically important for leaders to understand what fosters IWB among employees. Those employees who have high interdependent self-construal display more IWB under the influence of transformational leader as compared to the employees who prefer personal identities and goals over their organizational identities and goals. Therefore, leaders should try to initiate socialization and training programs to bring closer their subordinates. This can be applied to the recruitment strategy by selecting those employees who prefer group goals and aspirations over individual goals and aspirations. Continuous innovation is critical for leaders and as innovation brings change in organization and employees who are socially interwoven care and help each other to accept the change. Those who are socially distant are difficult to convince for a change because they prefer status quo. By creating a greater sense of empowerment, transformational leaders could have a more positive effect on levels of IWB of their
subordinates. To promote feelings of psychological empowerment, managers should articulate a vision to innovate continuously to inspire employees, recognize their efforts and give autonomy in job-related activities, clarify goals through collaboration and clearly specify tasks, responsibilities, and rewards, understand their needs and demands, build trust and confidence among employees to try out new ideas. To conclude, our findings suggest that not only the motivational issue of “what do you want” is important for employee IWB, but that the self-identity issue of “who you are” also plays an important role in stimulating employees’ IWB.

Limitations and recommendations

The current study in not without limitations. First, we were unable to establish causality due to the cross-sectional nature of data. We could not examine whether empowered employee causes more innovativeness in his/her behavior or willingness to innovate results in more psychological empowerment. Second, we relied on a questionnaire study and convenience samples. Although convenience samples were used and data was collected from China, the emergence of similar results across studies helps reduce concerns of limited generalizability and future research is needed to replicate results across western cultures (e.g. America, Western Europe), work contexts, and study designs. Third, cross-sectional, self-report method of collecting data might result in common method bias. We encourage researchers to continue this line of research by exploring other potential mediator variables on the effects of transformational leadership on IWB and by conducting longitudinal studies to explore the causal relationships implied in this study. It would also be beneficial to focus on the impact of transformational leadership on team-level behaviors and their impact on IWB, in particular the interaction of individuals with each other and the interaction of individuals as a team because most of the innovations take place in teams (Hülsheger et al., 2009).

Fourth, the present study relied on supervisory judgments for measuring IWB. Although it is presumed that supervisory judgments are good measures of IWB, there is always the potential for bias in perceptual processes. Therefore, future research might address this issue by including both supervisor and peer ratings in their studies. This study analyzed the moderating role of self-construal on the relation between transformational leadership and IWB. However, transformational leadership affects other job behaviors such as job satisfaction (Walumbwa et al., 2005), turnover intentions (Walumbwa and Lawler, 2003), organization commitment (Avolio et al., 2004) and job performance (Walumbwa et al., 2008). Future research may continue to examine whether self-construal moderates the effects of transformational leadership on these outcome variables.

In sum, this is the first study to examine the moderating effects of interdependent self-construal and independent self-construal on the relationship between transformational leadership and IWB in multiple industries and at multiple organizational levels.

References


**Further reading**


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