Transformational leadership and innovative work behavior

The role of motivation to learn, task complexity and innovation climate

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Abstract

Purpose – The purpose of this paper is to investigate the effect of transformational leadership on employees’ innovative work behavior, and the mediating role of motivation to learn, and the moderating role of task complexity and innovation climate on the link between transformational leadership and innovative work behavior.

Design/methodology/approach – A questionnaire, designed as a self-reported survey, was distributed to full-time employees and their respective supervisors working in 35 firms (services and manufacturing sectors) in Pakistan. Data were collected from 338 employee–supervisor dyads. The hypotheses were tested using structural equation modeling.

Findings – Results showed that transformational leadership had a positive impact on employees’ innovative work behavior and motivation to learn mediated transformational leadership–innovative work behavior link. The study further showed that task complexity and innovation climate moderated the relationship between transformational leadership and employees’ innovative work behavior.

Research limitations/implications – Based on the premises of interactionist perspectives on individual innovation, this study integrated multi-level variables to investigate leaders’ influences on followers’ innovative work behavior. This study contributed to the existing literature by providing empirical evidence on influence of transformational leadership on employees’ innovative work behavior as well as the impact of both individual and organizational level variables.

Practical implications – The close connection among transformational leadership, motivation to learn and innovative work behavior suggests that transformational leadership traits among managers are important to enhance employees’ innovative work behavior. Organizations should pay attention to creating a climate that is supportive of innovation and encourage individuals to learn new knowledge and skills, and provide employees with opportunities to use their acquired knowledge and skills.

Originality/value – This paper contributed to leadership and innovation literatures and provided insights into how the practitioners could use an appropriate leadership style to enhance innovative work behavior among employees. The study adopted a distinct model comprising five variables to investigate innovative work behavior from a multi-level perspective, i.e., motivation to learn and innovative work behavior at the individual level, task complexity at the unit level and innovation climate and leadership at the organizational level. This integrated model of using predictors from multiple levels supported the theoretical assumptions that innovative work behavior resulted from the interaction of individual, group and organizational level factors.

Keywords Organizational culture, Innovation, Leadership, Motivation psychology

Paper type Research paper

Introduction

An important factor in determining organizational competitive advantage is employees’ innovative work behavior (Jiang and Gu, 2016; Shin et al., 2017; Wang et al., 2015). Innovative work behavior refers to activities pertaining to the employee’s development, promotion and implementation of a useful innovation at any organizational level (Rank et al., 2004). Innovative work behavior includes the development of new ideas, technology and techniques, as well as the trial and application of new methods related to
business procedures, in specific work areas. Organizations need to develop innovations to meet emerging problems and challenges due to increasing global competition, customer expectations or market changes (Savelsbergh et al., 2012; Somech and Khalaili, 2014). These challenges require employees to engage in innovative behaviors to improve the current state. Innovation helps the organizations to become viable and widely accepted as a critical factor for organizational success (Janssen et al., 2004). One of the best ways to become innovative is to capitalize employees' innovative abilities which ensure the continuous and long term effectiveness (De Jong and Den Hartog, 2010). Using their innovative abilities, employees can better contribute to organizational success by generating, promoting and implementing novel and useful ideas to improve work procedures, products and services termed as innovative work behavior (Janssen, 2000). It is therefore vital for organizations to identify and enhance the factors that regulate individuals' innovative work behavior.

Because of the complexity of the challenges, employees need to work and learn together to develop novel and innovative solutions (Truijen et al., 2013). Although transformational leadership is supposed to be positively related to follower innovative work behavior, the prior studies have yielded inconsistent results and meta-analytic findings showed a high variation in the relationship between transformational leadership and innovative work behavior (Afsar et al., 2014; Uhl-Bien and Arena, 2018; Vessey et al., 2014). Given these inconclusive findings, researchers question the simplistic transformational leadership–innovative work behavior relationship in order to consider through what explanatory mechanisms (via what mediators) and under what boundary conditions (in the presence of what moderators) transformational leaders might promote innovative work behaviors (Rosing et al., 2011; Tse et al., 2018). The goal of the present study is to address this important yet relatively unclear issue. This study examines the mediating role of employees' motivation to learn and the moderating effects of organizations' task complexity and innovation climate in the process by which transformational leadership influences employees' innovative work behavior.

Within the domain of creativity research, most studies have focused on leader's influence on employees' creativity rather than on innovative work behaviors, leaving employees' engagement in the generation as well as implementation of ideas mostly unearthed and unexplored (Hughes et al., 2018). A recurrent theme in the literature is that innovative work behaviors are challenging, risky, complicated and uncertain; so there are intervening variables that explain the link between transformational leadership and an individual's innovative work behavior (Afsar et al., 2014; Choi et al., 2016; Jaiswal and Dhar, 2015), such as follower relational identification (Qu et al., 2015), promotion focus (Henker et al., 2015) and knowledge sharing (Masood and Afsar, 2017). It has been suggested that more research is needed that investigates the underlying mechanism linking transformational leadership with innovative work behavior. Therefore, considering the dearth of research on the relationship between leadership and employees' innovative work behavior, the research questions in this study could be considered timely and appropriately to improve organizational innovation by exploring transformational leaders' influence on employees' innovative work behavior and the aforementioned multi-level mediating and moderating factors.

The reasons to select employees' motivation to learn as a mediating factor and task complexity and innovation climate as moderating factors lie within the notion of the integration of multi-level factors (i.e. individual, unit and organizational) for a holistic understanding of employees' innovative work behaviors (Afsar et al., 2018; Choi et al., 2016). The selection of such multi-level variables is based on the "interactionist perspective of creativity" (IPC) framework, which explains individual differences in level of innovativeness in the organizational context. From the interactionist perspective, employees' behavior is the outcome of a complex interaction of individual, situational and other related contextual or contingency factors (Woodman et al., 1993). Therefore, employees' innovative work behavior
could be seen as complex interactions and reciprocal causations of individual, unit and organizational level factors, which could either facilitate or inhibit their initiative in organizational contexts (Anning-Dorson, 2017; Yuan et al., 2018). Based on this IPC, the study assumes that leaders’ influence on followers’ innovative work behavior depends on leaders’ interactions with followers as individuals, as well as other situational and contextual factors (Koseoglu et al., 2017; Masood and Afsar, 2017).

Employees’ engagement in innovative work behaviors will vary depending on managers’ influence on an individual employee, as well as on the interaction with his or her level of motivation to learn, the nature of task complexity and the innovation climate. Additionally, as both employees’ innovative work behavior and managers’ transformational leadership are multi-constructs and multi-level disperse phenomena (Braun et al., 2013), and factors from multiple levels in the organizations would be appropriate to investigate the influence of transformational leadership on employees’ innovative work behavior, therefore, the present study selected employees’ motivation to learn as an individual-level factor, task complexity as a group level factor and innovation climate as an organizational level factor to investigate transformational leadership influence on employees’ innovative work behavior. While many leadership styles focus on leaders’ interactions with followers at the individual level, transformational leadership integrates leaders’ interactions with followers at multiple levels, i.e., through “individualized consideration” and “intellectual stimulation” at the individual level, and “idealized influence” and “inspirational motivation” at the group and organizational levels (Masood and Afsar, 2017). Because of multi-level influence, transformational leadership is assumed to be better to assess the holistic view of leadership’s influence on employees’ innovative work behavior (Hughes et al., 2018; Kark et al., 2018; Masood and Afsar, 2017). Therefore, from the IPC, the study investigates the influence of transformational leadership on employees’ innovative work behavior and the possible intervening effects of motivation to learn, task complexity and innovation climate in the influence process (Figure 1).

**Literature review and hypotheses development**

Transformational leadership is described as the process in which leaders play an idealized role model, stimulate and encourage innovative work behavior, provide inspirational motivation and engage in supporting and mentoring followers to achieve the organization’s shared vision and goals (Bass and Avolio, 1994; Bednall et al., 2018; Suifan et al., 2018). Transformational leaders’ personalized attention and support to followers’ needs and requirements could
increase their influence on followers’ engagement in creative activities. By constantly questioning and challenging followers’ assumptions and thinking, these leaders stimulate followers’ intellectual thinking, which ultimately encourages followers to become involved in generation and implementation of ideas. Such leaders have the ability to articulate the organizational vision with individual goals, increasing inspirational motivation among followers (Bednall et al., 2018). Therefore, it is assumed that transformational leaders will be able to inspire individual employees by relating their future to the organization’s future and to encourage them to engage in the innovative work behaviors by developing a strong sense of shared vision and belongingness with the organizations.

Transformational leaders have a positive influence on enhancing organizational innovation (Bass and Avolio, 1994). These transformational leaders move the employees past, the employee’s self-interests into the state of motivation to vigorously pursue an organizational vision. This effect is achieved through intellectual stimulation, emotional appeal and inspiration from the leader and innovation goals seem vibrant, alive, engaging and even tangible (Zuraik and Kelly, 2019). Transformational leaders, through their visionary initiatives, functional expertise, individualized mentoring, supportive culture and intellectual stimulation abilities, could influence employees to engage in innovative work behaviors (Afsar et al., 2014). Such leaders typically encourage employees to engage in innovative work behaviors by providing a supportive environment (Bednall et al., 2018; Scott and Bruce, 1994). According to Masood and Afsar (2017), transformational leaders create a supportive workplace via inspirational, motivation and individualized considerations. Such a supportive environment effectively increase employees’ motivation to engage in initiating and implementing new and novel ideas. This environment also provides support and feedback in the search for innovative and optimal solutions (Johannessen et al., 2001; Tse et al., 2018; Wang et al., 2014).

Qu et al. (2015) used a sample of 420 leader–follower dyads from an energy company in mainland China and revealed the positive influence of transformational leadership on employees’ innovative outcomes. They found that transformational leadership enhances innovative performance of employees. Choi et al. (2016) conducted a study on 356 employees working in Korea manufacturing firms and found that transformational leadership facilitated innovative work behaviors among employees. Du et al. (2016) noted that innovation is a time-consuming and risky effort and, therefore, that leaders should know the right time and procedure to provide necessary support to enhance followers’ innovative performance. Ma and Jiang (2018) suggested that transformational leaders encourage employees’ openness, experimentation and risk-taking behavior, which consequently promote innovative work behaviors in organizational contexts. Based on above arguments, it is hypothesized:

**H1.** Transformational leadership is positively associated with innovative work behavior.

**Motivation to learn as a mediating factor of innovative work behavior**

It is argued that “a continuous commitment to learning is central to innovativeness” (Rhee et al., 2010, p. 66). Weisberg (1999) reckoned that learning can be indispensable for creativity, and the creative behavior of idea generation is a step-stone to innovative work behavior of adoption and implementation of those ideas that are useful (Scott and Bruce, 1994). Learning orientation can be presumed as one of many motivational orientations, and according to Sujan et al. (1994), this kind of behavior engages the individual in activities that help individuals in generating and implementing useful ideas. Employees’ decision to engage or not to engage in innovative behaviors is influenced by their motivation to learn (Yu et al., 2018). Motivation to learn refers to employees’ desire to learn new knowledge or insights that drives an individual to be creative and innovative in their work (Gong et al., 2009).
Individuals with strong motivation to learn make efforts to learn whenever they identify a learning opportunity, potentially leading to acquiring new knowledge and skills. Sujan et al. (1994) advocate that individuals who value learning, are often motivated, value personal growth and take pleasure in mastering any given task. Individuals with strong motivation to learn see difficult tasks as opportunities for growth and development (Payne et al., 2007), seek feedback from others in order to improve (VandeWalle and Cummings, 1997), and frame failure as an opportunity to learn (Farr et al., 1993). A strong learning orientation reduces the concern with protecting image and reputation during interpersonal interactions (Frink and Ferris, 1998) and frees individuals to engage in constant improvement. Other studies supported this notion by arguing that individuals with a learning orientation often would search out challenges that offered individuals, opportunities to learn and to master any given task in an effective way (Colquitt et al., 2000).

Previous studies have supported the relationship between motivation to learn and acquisition of new knowledge (e.g. Wang and Noe, 2010). For instance, with a sample from a manufacturing organization in the UK, Birdi et al. (1997) report that employees with high motivation to learn are engaged in four types of developmental activities: required training, on-the-job training, voluntary job-related learning and voluntary non-job-related learning. A meta-analytical study also provided compelling evidence that motivation to learn was positively correlated with learning outcomes on declarative knowledge and skill acquisition (Colquitt et al., 2000).

According to componential framework of creativity (Amabile, 1983), domain-relevant skills include factual knowledge, technical skills and special talents that provide essential background knowledge and basis for innovation. Amabile (1983) posits that domain-relevant skills can be seen as a set of cognitive pathways for a given problem or task. The larger the skill set, the more alternatives are available for generating, developing and implementing something new. Empirical findings confirm that the acquisition of knowledge and skills can assist individuals in generating new ideas (Auernhammer and Hall, 2014; Dong et al., 2017). Accordingly, we argue that motivation to learn enables employees to pay more attention to, and exert more effort in, acquiring new knowledge and skills, leading to an expansion of their “cognitive pathways,” thus increased innovative behavior. Empirical studies also showed that learning orientation focused on developing competence and task mastery, when compared to performance orientation (Yu et al., 2018), was positively related to innovative behaviors. Additionally, transformational leaders, through their idealized influence and intellectual stimulation, could enhance followers’ intrinsic motivation and encourage them to engage in innovative activities (Braun et al., 2013; Kark et al., 2018; Zuraik and Kelly, 2019).

According to Marshall (1987, p. 424), the motivation for learning is “the meaningfulness, value, and benefits of academic tasks to the learner – regardless of whether or not they are intrinsically interesting.” Leaders contribute to the willingness of employees to learn and to seek continuous updating of their knowledge about various aspects of their daily practice (Khaola and Coldwell, 2019; Sattayaraksa and Boon-it, 2018). Transformational leaders focus on intrinsic motivation, facilitate the professional development of employees, and have a common vision (Yukl, 2009). It is also assumed that transformational leadership, by developing a fair climate, can increase employees’ intrinsic motivation and ultimately foster innovativeness in organizational contexts. Leithwood and Jantzi (2006) found that transformational leadership had a significant effect on the desire of employees to change their practices, their motivation to learn and make an additional effort at work, and their ability to implement innovations.

Usually, transformational leadership creates an environment that inspires employees in challenging and non-routinized tasks and makes employees’ jobs more interesting and enjoyable (Golden and Shriner, 2017). Such a supportive environment leads employees to
involve themselves in the creative process and to seek innovative outcomes (Ma and Jiang, 2018; Usui-Kakkuri et al., 2016). Additionally, Zhang and Bartol (2010) found that transformational leaders improve employee creativity by providing psychological empowerment, which boosts employees’ motivation to learn. Yu et al. (2018) reported the finding that employees’ intrinsic motivation contributes to innovative work behaviors because they feel in control of their activities. It is assumed that motivation to learn could play a mediating role in the process of transformational leaders’ influences on employees’ engagement (Kark et al., 2018; Saeed et al., 2019). Therefore, based on the theoretical assumptions and earlier research evidence, this study proposes the following hypothesis:

**H2.** Motivation to learn mediates the relationship between transformational leadership and employees’ innovative work behavior.

**Moderating role of task complexity**

Proponents of the IPC model identified task complexity as the major contextual factor that can influence individuals’ creative behavior (Urbach et al., 2010). In the organizational context, task complexity refers to individuals’ perception of the challenging nature of the work (Doci and Hofmans, 2015; Wojtczuk-Turek and Turek, 2015). However, the nature of the task still plays a critical role in employees’ innovative performance (Doci and Hofmans, 2015; Hughes et al., 2018). The degree of employees’ intent toward innovative activities depends on complexity and the challenging nature of the tasks. Cummings and Oldham (1997) noted that when the completion of complex tasks requires a variety of skills, employees feel more motivated to pursue new ideas. Complex tasks typically stimulate group discussions about work-related problems, and as a consequence, engaged and skilled team members provide insights that stimulate the process of forming a shared understanding of the need for change (Lantz, 2011). It is less likely that employees will look for creative ideas when the task is ordinary and simple. Complex tasks provide substantial decision-making latitude and opportunities to use high-level skills, thereby urging employees to proactively identify the task challenges and explore new possibilities and alternative courses of action (West, 2002). Performing these intrinsically motivating tasks also promotes risk-taking and experimental behaviors among employees because such tasks generate sufficient attention and motivation to experiment with unorthodox approaches when resolving given challenges (Sung et al., 2017).

Complex tasks also help satisfy employees’ basic needs (e.g. the need for autonomy), need for personal growth and competence (Maloni et al., 2016), or extrinsically motivating because they are instrumental to the achievement of work goals (Bakker and Demerouti, 2007). Shalley and Gilson (2004) suggest that jobs that are complex enhance employees’ excitement about their work activities and their interest in completing these activities; this excitement can increase innovative endeavors under a leadership approach that is supportive of risk taking and pursuing intellect. When task complexity is high, task-specific motivation of employees toward learning and self-development enhance. Innovative work behavior is an effective means of fulfilling high-order needs (Chae and Choi, 2018). To exhibit innovative responses to complex tasks, individuals need internal desires to strive and learn because these needs enable them to persevere despite the challenges, inconsistent findings and performance pressures (Gorman et al., 2012).

Zhang and Kwan (2018) found that team task complexity strengthened the direct effect of empowering leadership on team learning behavior and team creativity. Extending their argument, it is reasonable to propose that task complexity would also moderate the effect of transformational leadership on motivation to learn and innovative work behavior at the individual level. Employees with strong growth needs perceive task-related complexity as opportunities to fulfill their developmental and learning needs. Such motivational tendency
renders individuals to respond positively to complex jobs that enable them to search new possibilities and experiment with various alternatives, thereby achieving personal growth and learning (Jeng, 2018). The lack of appreciation for growth and learning among employees, when task complexity is low, urges them to avoid frustrations of dealing with the challenges of complex jobs. In this case, these employees withdraw work efforts, thereby leading to reduced creative engagement and performance, even when their leaders support them to take risks and stimulate intellectual abilities. When performing simple tasks, individuals may perceive that the task “is too easy” and therefore do not dedicate their full attention and processing capabilities to performing the task at hand (Speier et al., 2003).

As complexity increases, the knowledge, skills and abilities of a single person are unlikely to meet the task demands (Pearce, 2004). In these cases, the need for leadership increases (Bligh et al., 2006). Shared leadership facilitates that different members use their expertise to lead the team by sharing knowledge and information and integrating feedback to problem solving within the team (Resick et al., 2014). Müller et al. (2018) found that the relationship between shared leadership and team performance is moderated by perceived task complexity, such that shared leadership is more strongly related to team performance when teams perceive high task complexity. Cooperation and exchange of information are then strongly required in facing the contextual demands and consequently achieving team goals in complex tasks (Pearce, 2004). On the opposite, teams that centralize influence and knowledge compromise their performance in complex tasks (Bunderson et al., 2016).

From a leadership perspective, a complex task environment requires a non-controlling and supportive leader, such as one who exhibits transformational leadership qualities and generates self-determination, autonomy and feelings of achievement among followers (Mahmood et al., 2019; Omri, 2015). A highly complex task coupled with high motivation to learn could accelerate leaders’ influence on employees’ desire to engage in innovative endeavors (Dóci and Hofmans, 2015; Poutanen et al., 2016; Willis et al., 2017). It is assumed that task complexity, supported by substantial autonomy and skill variety, will drive employees’ interest and motivation in the innovative work behaviors collectively with other contextual factors. Therefore, the study proposes the following hypotheses:

\[ H3. \text{Task complexity moderates the relationship between transformational leadership and motivation to learn.} \]

\[ H4. \text{Task complexity moderates the relationship between motivation to learn and employees’ innovative work behavior.} \]

\[ H5. \text{Task complexity moderates the relationship between transformational leadership and employees’ innovative work behavior.} \]

**Innovation climate as a moderating variable**

One of the organizational factors affecting innovation is organizational climate. It has been stated that to foster innovation, it is particularly important to create an organizational climate that is non-threatening psychologically, supports risk taking and motivates the employees to apply initiative (Parzefall et al., 2008). It has also been emphasized that organizational climate needs to include certain characteristics, such as team cohesion, supervisor support and autonomy, to foster the innovative work behavior of employees (Martins and Terblanche, 2003; Sönmez and Yıldırım, 2019). Studies have empirically shown that supportive innovation climate enhances innovative work behavior among employees by fostering receptiveness to new ideas and improving proactiveness in exploring new opportunities (Yeoh and Mahmood, 2013; Yu et al., 2013). Nonetheless, limited literatures on innovation climate have integrated to advance a more precise role of innovative climate at
different levels, which limits our understanding of innovation climate as a multi-level phenomenon (Wang et al., 2013).

Recent multi-level studies have demonstrated that individual innovative work behavior positively relates to group level variables including leadership style, supportive coworker (Afsar et al., 2014) and support for innovation (Chen et al., 2013), signifying the importance of multi-level consideration of innovation climate. However, as innovation climate is a broad concept, very limited studies have addressed cross-level issues, including whether group climate motivates individual level innovative work behavior (Yeoh and Mahmood, 2013; Yu et al., 2013). Therefore, this study assumed that innovation climate could mediate transformational leaders’ influence on employees’ innovative work behavior. Usually, the internal organizational environment plays a significant role in innovative work behavior by inspiring employee’s proactivity (Widmann and Mulder, 2018).

Earlier empirical research on organizational support, such as climate for innovation (Chen and Hou, 2016), support for innovation (Sarros et al., 2011) and psychological empowerment for innovation (Afsar et al., 2014), indicated that organizational support drives employees’ innovation behavior. When a climate encourages the employees’ innovation capacity, tolerates risk and supports personal growth and development, the culture may be described as an innovative climate or culture (Martín-de Castro et al., 2013). Innovation-oriented cultural values are flexibility, creativity and openness to innovation. Innovation-oriented cultural norms include a willingness to find unbureaucratic solutions quickly, an expectation to develop new products permanently, and an appreciation of unconventional ideas. Moreover, cultural values enhance the flexibility of organization to innovate (Stock et al., 2013). Thus, the values support the innovation process via inserting expected behaviors within an organization’s culture (Hogan and Coote, 2014). As such, cultural values are intangible and abstract, thus providing an essential basis for norms such as shared social expectations and rules in the organization. Likewise, norms predict acceptable behaviors that should be followed by employees. A number of studies have investigated the correlation between organizational innovative climate and innovative work behavior (e.g. De Jong and Den Hartog, 2007; Scott and Bruce, 1994; Shanker et al., 2017; Sönmez and Yıldırım, 2019; Yu et al., 2013). For example, in the study by Scott and Bruce (1994) on this subject, they highlighted the necessity of having an organizational climate that supports innovation and provides necessary resources. In the qualitative study by De Jong and Den Hartog (2007), managers stated that the innovative climate of the organization was the precursor to employees’ innovative work behavior. Yu et al. (2013), in their study, reported there to be a positive correlation between knowledge sharing and innovative work behavior and between a pro-innovation organizational climate and innovative work behavior. Furthermore, Shanker et al. (2017), in their study, revealed that the innovative climate of an organization enhances employee’s innovative work behavior.

When the organization itself nurtures a climate for innovativeness and risk taking, employees feel empowered and view their successes as the result of voluntary engagement in innovative activities (Afsar et al., 2014). In some cases, contextual factors, such as support for innovation, can act as a moderating variable and weaken (negatively impact) the effects of transformational leadership on employees’ innovative work behavior. In their study of 93 teams and their leaders in multinational organizations, Si and Wei (2012) found that the effect of transformational leadership on employees' creative performance is relatively high when the employees’ empowerment climate is low, and vice versa. Therefore, based on theoretical grounds and previous literature reviews, this study proposes the following hypothesis:

**H6.** Innovation climate moderates the relationship between transformational leadership and employees’ innovative work behavior.
Research methods
Quantitative approach and survey methodology were employed to collect employee–supervisor/colleague dyadic data. For the purpose of this study, initially, 44 organizations located in Pakistan were contacted. To stipulate their participation in the study, a presentation to the top management of each organization was delivered to inform them about the need and significance of the study, emphasizing its managerial implications. The authorities from 35 organizations showed their willingness to participate in the study. Next, with the cooperation of the management, a special orientation session for the employees and their immediate supervisors was organized at each participating organization. In the sessions, participants were informed about the importance of their careful observation of each survey item. At the end of each session, two different types of sealed envelopes (employee survey and supervisor survey) containing a questionnaire, cover letter and return envelope were hand-delivered and the participants were requested to personally complete it and return it in a sealed envelope to their HR department.

Data were collected from the full-time employees and their respective supervisors working in the services and manufacturing sectors. The services sector included industries, such as banking and insurance, hotels, healthcare and telecommunication, while the manufacturing sector included industries, such as textile and automobile. Employees were asked to voluntarily fill out questionnaires containing statements on demographics, transformational leadership, motivation to learn, innovation climate and task complexity. Employees were also asked to identify their immediate supervisor who could rate them on their innovative work behaviors on a separate questionnaire to be placed in an envelope which was provided at the time of distribution of the surveys. The questionnaires contained the names of the respondents on the back which was used only for identification and matching purposes. Complete confidentiality was assured whereby the names of the respondents were only disclosed to supervisors for rating their innovative work behaviors. Supervisors identified by their employees were thus approached and asked to rate the remaining part of the questionnaire and put it back in the same envelope. Both employees’ and supervisors’ responses were kept confidential from each other. We ensured no supervisor rated more than three respondents in order to avoid the challenges of personal bias and within-group issues of inflated results. Altogether 240 supervisors and 850 subordinates were selected to participate in the study. In total, 117 supervisors (response rate = 48.7 percent) and 349 subordinates (response rate = 41.05 percent) provided complete responses. Of these, 11 questionnaires were unusable due to missing value, unengaged responses or outliers (Hair et al., 2014). After removing incomplete or invalid responses, the final supervisor–employee dyad responses were 338, yielding a response rate of 39.7 percent. A majority of the respondents (63 percent) worked in the services industry, 65.9 percent were male, 30.8 percent were in non-managerial positions, 22.7 percent were comprised of lower management, 29.6 percent were in middle management and 16.9 percent were in senior management positions. Among them, 42.6 percent had been with the organization for 5 years or less, 23.6 percent had been with the organization from 6 to 10 years, and 33.9 percent had been with the organization for 10 years or more.

Measures
All constructs were measured on a five-point Likert scale. All the measurement items were taken from past research after studying the evolution of the variables of interest.

Innovative work behavior
The ten-item scale for innovative work behavior was adopted from the study of De Jong and Den Hartog (2010). Supervisors were asked to give their opinions about innovative work behavior of their subordinates. Sample item includes: “This employee pays attention to issues that are no part of his daily work.” Cronbach’s α for innovative work behavior was 0.84.
Transformational leadership

Transformational leadership was measured using employee ratings on the 20 transformational leadership items from the Multifactor Leadership Questionnaire, specifically the Form5X-Short for which followers rate their leaders. This scale has 20 items measuring four subscales (idealized influence, individualized consideration, inspirational motivation and intellectual stimulation), each having five items (Bass and Avolio, 1997). These subscales have been converted into one higher-order factor which is consistent with recent empirical (Afsar et al., 2014; Masood and Afsar, 2017) and theoretical developments (Muenjohn and Armstrong, 2008) of transformational leadership. Transformational leadership was conceptualized at the group level. To evaluate the appropriateness of accumulating this construct to the group level, we examined $R_{wg}$ (within-group agreement), ICC(1) (intra-class correlation coefficient), and ICC(2). The mean value of $R_{wg}$ for transformational leadership was 0.783. ICC(1) and ICC(2) were 0.217 ($p < 0.001$) and 0.426, respectively. Some scholars suggest that despite low ICC(2) value, it is also feasible to aggregate provided that there are high $R_{wg}$ value and significant between-group variance of the construct (Chen and Bliese, 2002; Kozlowski and Hattrup, 1992). Hence, we aggregated subordinates’ ratings of transformational leadership to the group level. The Cronbach’s $\alpha$ for transformational leadership was 0.91.

Motivation to learn

Motivation to learn was measured by three items adapted from Noe and Schmitt (1986), supplemented by one item in VandeWalle’s (1997). The sample items include “I often look for opportunities to develop new skills and knowledge,” and “I will try to learn as much as I can from my job.” Cronbach’s $\alpha$ for motivation to learn was 0.87.

Innovation climate

Innovation climate was measured using 16-item scale developed by Scott and Bruce (1994). It measures the degree to which individuals view the organization they work for as being open to change, and the level of support for innovation. In general, the innovation climate scale measures the shared expectations and perceptions of the employees of policies and practices that support employees taking initiative and exploring innovative approaches (Ostroff et al., 2003). This scale demonstrated adequate coefficient alpha reliability ($\alpha = 0.92$).

Task complexity

To measure task complexity, a four-item scale developed by Maynard and Hakel (1997) was used. Example includes “my task is mentally demanding.” Cronbach’s $\alpha$ for this scale was recorded as 0.81.

Measurement model

To assess the adequacy of the scales used, confirmatory factor analyses were performed. The measurement model estimates showed that the factor loadings (all $> 0.50$), average variance extracted (AVE) (AVE $> 0.50$) and CA (all $> 0.81$) were all greater than the minimum threshold limit (Hair et al., 2014). As can be seen from Table I, the AVE values were greater than 0.50 and all the composite reliability values were greater than AVE values. This further confirms convergent validity of the proposed model. Furthermore, all the ASV and MSV values were found to be less than their respective AVE values confirming the discriminant validity of the constructs. Thus, the construct validity was established for all the study constructs. In addition, the VIF values ranged from 1.93 to 4.83 (below 10), indicating the absence of multicollinearity.
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<th>Latent variables and sources</th>
<th>Measure items</th>
<th>AVE</th>
<th>CR</th>
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<th>Factor loadings</th>
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<tr>
<td>Transformational leadership (Podsakoff et al., 1996)</td>
<td>My leader instills pride in me when associated with others</td>
<td>0.76</td>
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<td>My leader talks about my most important values and beliefs</td>
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<td>My leader specifies the importance of a strong sense of purpose</td>
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<td>My leader convinces me to go beyond self-interest for the good of the group</td>
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<td>My leader acts in ways that build others’ respect for me</td>
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<td>My leader considers moral and ethical consequences of decisions</td>
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<td>My leader displays a sense of power and confidence</td>
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<td></td>
<td></td>
<td></td>
<td>0.673</td>
</tr>
<tr>
<td></td>
<td>My leader emphasizes the importance of having a collective sense of mission</td>
<td></td>
<td>0.599</td>
<td></td>
<td></td>
<td></td>
<td>0.599</td>
</tr>
<tr>
<td></td>
<td>My leader talks optimistically about future</td>
<td></td>
<td>0.684</td>
<td></td>
<td></td>
<td></td>
<td>0.684</td>
</tr>
<tr>
<td></td>
<td>My leader talks enthusiastically about what needs to be established</td>
<td></td>
<td>0.817</td>
<td></td>
<td></td>
<td></td>
<td>0.817</td>
</tr>
<tr>
<td></td>
<td>My leader articulates a compelling vision of future</td>
<td></td>
<td>0.728</td>
<td></td>
<td></td>
<td></td>
<td>0.728</td>
</tr>
<tr>
<td></td>
<td>My leader expresses confidence through his/her behaviors that goals will be achieved</td>
<td></td>
<td>0.595</td>
<td></td>
<td></td>
<td></td>
<td>0.595</td>
</tr>
<tr>
<td></td>
<td>My leader re-examines the critical assumptions and questions whether they are appropriate</td>
<td></td>
<td>0.693</td>
<td></td>
<td></td>
<td></td>
<td>0.693</td>
</tr>
<tr>
<td></td>
<td>My leader seeks differing perspective when solving problems</td>
<td></td>
<td>0.627</td>
<td></td>
<td></td>
<td></td>
<td>0.627</td>
</tr>
<tr>
<td></td>
<td>My leader gets others to look at problems from many different angles</td>
<td></td>
<td>0.717</td>
<td></td>
<td></td>
<td></td>
<td>0.717</td>
</tr>
<tr>
<td></td>
<td>My leader suggests new ways of looking at how to complete assignments</td>
<td></td>
<td>0.727</td>
<td></td>
<td></td>
<td></td>
<td>0.727</td>
</tr>
<tr>
<td></td>
<td>My leader spends time coaching, teaching and mentoring his/her followers</td>
<td></td>
<td>0.595</td>
<td></td>
<td></td>
<td></td>
<td>0.595</td>
</tr>
<tr>
<td></td>
<td>My leader treats others as individuals rather than just as a member of a group</td>
<td></td>
<td>0.684</td>
<td></td>
<td></td>
<td></td>
<td>0.684</td>
</tr>
<tr>
<td></td>
<td>My leader considers an individual as having different needs, abilities and aspirations from others</td>
<td></td>
<td>0.594</td>
<td></td>
<td></td>
<td></td>
<td>0.594</td>
</tr>
<tr>
<td></td>
<td>My leader helps others to develop their strengths</td>
<td></td>
<td>0.728</td>
<td></td>
<td></td>
<td></td>
<td>0.728</td>
</tr>
<tr>
<td>Innovative work behavior (De Jong and Den Hartog, 2010)</td>
<td>How often this employee pays attention to issues that are no part of his daily work</td>
<td>0.69</td>
<td>0.86</td>
<td>0.84</td>
<td>0.27</td>
<td>0.32</td>
<td>0.817</td>
</tr>
<tr>
<td></td>
<td>How often this employee wonders how things can be improved</td>
<td></td>
<td>0.943</td>
<td></td>
<td></td>
<td></td>
<td>0.943</td>
</tr>
<tr>
<td></td>
<td>How often this employee searches out new working methods, techniques or instruments</td>
<td></td>
<td>0.916</td>
<td></td>
<td></td>
<td></td>
<td>0.916</td>
</tr>
<tr>
<td></td>
<td>How often this employee generates original solutions for problems</td>
<td></td>
<td>0.638</td>
<td></td>
<td></td>
<td></td>
<td>0.638</td>
</tr>
<tr>
<td></td>
<td>How often this employee finds new approaches to execute tasks</td>
<td></td>
<td>0.718</td>
<td></td>
<td></td>
<td></td>
<td>0.718</td>
</tr>
</tbody>
</table>

Table I. Survey measures and their estimates (continued)
<table>
<thead>
<tr>
<th>Latent variables and sources</th>
<th>Measure items</th>
<th>AVE</th>
<th>CR</th>
<th>CA</th>
<th>MSV</th>
<th>ASV</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>How often this employee makes important organizational members enthusiastic for innovative ideas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.733</td>
</tr>
<tr>
<td></td>
<td>How often this employee attempts to convince people to support an innovative idea</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.817</td>
</tr>
<tr>
<td></td>
<td>How often this employee systematically introduces innovative ideas into work practices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.716</td>
</tr>
<tr>
<td></td>
<td>How often this employee contributes to the implementation of new ideas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.625</td>
</tr>
<tr>
<td></td>
<td>How often this employee puts effort in the development of new things</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.684</td>
</tr>
<tr>
<td>Motivation to learn</td>
<td>I am motivated to learn the skills emphasized in the job</td>
<td>0.71</td>
<td>0.88</td>
<td>0.87</td>
<td>0.29</td>
<td>0.36</td>
<td>0.895</td>
</tr>
<tr>
<td>(Noe and Schmitt, 1986)</td>
<td>I will try to learn as much as I can from my job</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.911</td>
</tr>
<tr>
<td></td>
<td>I am willing to exert considerable effort in my job in order to improve my skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.776</td>
</tr>
<tr>
<td></td>
<td>I often look for opportunities to develop new skills and knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.828</td>
</tr>
<tr>
<td>Task complexity</td>
<td>I found my job as a complex task</td>
<td>0.64</td>
<td>0.82</td>
<td>0.81</td>
<td>0.23</td>
<td>0.27</td>
<td>0.673</td>
</tr>
<tr>
<td>(Maynard and Hakel, 1997)</td>
<td>My task is mentally demanding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.818</td>
</tr>
<tr>
<td></td>
<td>My task required a lot of thought and problem solving</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.773</td>
</tr>
<tr>
<td></td>
<td>I found my job to be a challenging task</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.875</td>
</tr>
<tr>
<td>Innovation climate</td>
<td>How do you rate your organization’s support of innovation?</td>
<td>0.76</td>
<td>0.95</td>
<td>0.92</td>
<td>0.41</td>
<td>0.53</td>
<td>0.919</td>
</tr>
<tr>
<td>(Scott and Bruce, 1994)</td>
<td>Creativity is encouraged here</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.737</td>
</tr>
<tr>
<td></td>
<td>Our ability to function creatively is respected by the leadership</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.794</td>
</tr>
<tr>
<td></td>
<td>Around here, people are allowed to try to solve the same problems in different ways</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.703</td>
</tr>
<tr>
<td></td>
<td>The main function of members in this organization is to follow orders which come down through channels</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.585</td>
</tr>
<tr>
<td></td>
<td>Around here, a person can get in a lot of trouble by being different</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.578</td>
</tr>
<tr>
<td></td>
<td>This organization can be described as flexible and continually adapting to change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.737</td>
</tr>
<tr>
<td></td>
<td>A person cannot do things that are too different around here without provoking anger</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.842</td>
</tr>
<tr>
<td></td>
<td>The best way to get along in this organization is to think the way the rest of the group does</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.638</td>
</tr>
<tr>
<td></td>
<td>People around here are expected to deal with problems in the same way</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.915</td>
</tr>
<tr>
<td></td>
<td>This organization is open and responsive to change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.825</td>
</tr>
<tr>
<td></td>
<td>The people in charge around here usually get credit for others’ ideas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.628</td>
</tr>
</tbody>
</table>

(continued)
For controlling the effect of method bias, procedural remedies as recommended by Podsakoff et al. (2012) were adopted such as data collection from different measures, i.e., predictor measures from one person and criterion from another (see Podsakoff et al., 2012 for further details). Likewise, to assess the threat of CMV, we employed Herman’s single-factor approach as recommended by Podsakoff et al. (2003) using confirmatory factor analyses to determine whether all the latent variables are explained through a single factor. The results indicate that a $\chi^2$ for a single factor recorded was $\chi^2_{194} = 2956.39$ and $\lambda^2$ for a five-factor model was recorded as $\lambda^2_{188} = 345.32$. Since the fit of a single-factor model is significantly worse than the four-factor model ($\Delta \chi^2_6 = 2611.07$), we have evidence to conclude that there are no serious threats of CMV in this data. To examine the fit of the five-factor model (transformational leadership, motivation to learn, task complexity, innovation climate and innovative work behavior), we performed confirmatory factor analysis before testing the hypotheses. The five-factor model tested on overall sample showed superior fit to the data when compared to the four-factor model where motivation to learn and task complexity were loaded on a single factor and the two-factor model where motivation to learn, task complexity and innovation climate and the one-factor model where all the items were loaded on a single factor (see Table II).

Table III presents the means, standard deviations and inter-correlations among the study variables. As can be seen, significant positive correlations were found between the predictor, mediator and outcome variable, thereby, providing preliminary support for the study hypotheses.

### Structural model
The structural model in Figure 2 shows the influence of task complexity and innovation climate on influencing innovative work behavior. It mirrors the $R^2$ value, path coefficient and their associated significance levels with respect to the $p$-value, with bootstrapping of 4,000 cases.

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$/df</th>
<th>CFI</th>
<th>NFI</th>
<th>TLI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five-factor model</td>
<td>2.218</td>
<td>0.942</td>
<td>0.926</td>
<td>0.938</td>
<td>0.052</td>
</tr>
<tr>
<td>Four-factor model</td>
<td>2.739</td>
<td>0.863</td>
<td>0.742</td>
<td>0.827</td>
<td>0.068</td>
</tr>
<tr>
<td>Three-factor model</td>
<td>3.621</td>
<td>0.726</td>
<td>0.653</td>
<td>0.674</td>
<td>0.113</td>
</tr>
<tr>
<td>Two-factor model</td>
<td>4.739</td>
<td>0.618</td>
<td>0.513</td>
<td>0.573</td>
<td>0.135</td>
</tr>
<tr>
<td>One-factor model</td>
<td>7.832</td>
<td>0.521</td>
<td>0.426</td>
<td>0.518</td>
<td>0.273</td>
</tr>
</tbody>
</table>

Table II. Confirmatory factor analysis to establish the distinctiveness of the constructs
The $\beta$-value in a path relationship exhibits the strength of the relationship between exogenous and endogenous variables, and the $R^2$ value indicates the overall predictive power of the structural model.

Figure 2 reveals that the transformational leadership was a significant predictor of both motivation to learn ($\beta = 0.436, p < 0.01$) and innovative work behavior ($\beta = 0.503, p < 0.01$). Motivation to learn also had a significant effect ($\beta = 0.363, p < 0.001$) on innovative work behavior. While task complexity had a significant effect on motivation to learn ($\beta = 0.228, p < 0.001$), task complexity ($\beta = 0.174, p = 0.231$) and innovation climate ($\beta = 0.073, p = 0.128$) had no evident significant effect on innovative work behavior.

Regarding the coefficient of determination, the structural model estimates that task complexity and transformational leadership explain 35.8 percent ($R^2$) of the variance in motivation to learn, whereas transformational leadership, task complexity and motivation to learn explain 48.4 percent ($R^2$) of the variance in innovative work behavior, excluding all the insignificant path relationships. Cohen (1988) defined three threshold limits: $R^2$ values less than 0.13 are not significant; $R^2$ values less than 0.26 are not tangent; and $R^2$ values greater than 0.26 are significant. This study estimates the minimum $R^2$ value to be 0.358, which is statistically significant.

**Hypotheses testing**

Table IV represents the path coefficients of transformational leadership to innovative work behavior, transformational leadership to motivation to learn and motivation to learn to innovative work behavior relationships. The estimated path coefficients ($\beta$s) are significant

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Variables</th>
<th>Mean (SD)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Transformational leadership</td>
<td>3.23 (0.49)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Motivation to learn</td>
<td>3.12 (0.67)</td>
<td>0.552**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Task complexity</td>
<td>3.45 (0.73)</td>
<td>0.392**</td>
<td>0.423**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Innovation climate</td>
<td>3.05 (0.44)</td>
<td>0.351**</td>
<td>0.296**</td>
<td>0.205**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Innovative work behavior</td>
<td>3.69 (0.52)</td>
<td>0.508**</td>
<td>0.586**</td>
<td>0.398**</td>
<td>0.311**</td>
<td>1</td>
</tr>
</tbody>
</table>

**Note:** **Correlation is significant at 0.01 level (two-tailed)**

**Table III. Mean, standard deviation and inter-correlations**

![Figure 2: Structural model with path coefficients](image-url)
(p < 0.05) before running mediation: 0.553 (Transformational leadership → Innovative work behavior), 0.537 (Transformational leadership → Motivation to lead) and 0.571 (Motivation to lead → Innovative work behavior). The necessary condition is maintained for the running mediation effect. The estimates of the effect of transformational leadership to innovative work behavior are significant at p < 0.001. Therefore, H1 is supported.

Table V represents the direct effects, standard error, indirect effects and total effects, along with their significance levels. The Sobel (1982) test is also performed to measure the significance of the indirect effect. The table exhibits the direct effect (of TL), indirect effects (TL to MTL and MTL to IWB) and total effect on innovative work behavior after the inclusion of the mediator (MTL). Regression coefficients of $c = 0.553$ ($p < 0.001$), $c = 0.327$ ($p < 0.001$), $a = 0.537$ ($p < 0.001$) and $b = 0.378$ ($p < 0.000$) represent TL → IWB (both $c$ and $c'$), TL → MTL ($a$) and MTL → IWB ($b$), respectively. The estimated results show that the indirect effect remains significant. However, the regression coefficient decreases from 0.553 (for $c$) to 0.327 (for $c'$). Therefore, the results of the study indicate that partial mediation occurs. To reaffirm the partial mediation, we also calculated the variance accounted for (VAF), which is 0.375 and within the range of 0.20–0.80. Further, Sobel’s (1982) test results showed that the indirect effect is also significant at $p < 0.001$. We conclude that $H2$ is proven, given that motivation to learn partially mediates the relationship between transformational leadership and innovative work behavior.

Table VI represents the interactive effects of task complexity and innovation climate. First, we tested the intervening effects of task complexity on the relationship between transformational leadership and motivation to learn. We found that the moderating effect of task complexity on the relationship between transformational leadership and motivation to learn was significant ($β = 0.132, p < 0.01$). This result confirmed $H3$. Figure 3(a) reveals that the relationship between transformational leadership and motivation to learn is stronger when the task complexity is high rather than low. Second, task complexity was also used as a moderating variable in the relationships between transformational leadership and innovative work behavior and between motivation to learn and innovative work behavior. We tested the impacts of the control variables on innovative work behavior in Model 1, where no specific influence was found to be significant. Model 2 measured the effects of IVs, such as transformational leadership and motivation to learn, on innovative work behavior. The interaction effect of task complexity and transformational leadership on innovative work behavior was significant ($β = 0.257, p < 0.01$), whereas the interaction effect of task
complexity and motivation to learn on innovative work behavior was insignificant ($\beta = -0.074$, $p < 0.01$). Figure 3(b) demonstrates that the relationship between transformational leadership and innovative work behavior is stronger when the task complexity is high rather than low. However, Figure 3(c) demonstrates that the relationship
between motivation to learn and innovative work behavior is not affected by the presence of a high or low level of task complexity. The moderating effect of innovation climate on the relationship between transformational leadership and innovative work behavior is found to be significant ($\beta = 0.139, p < 0.05$). Finally, regarding $H6$, Figure 3(d) also shows that the positive association between motivation to learn and innovative work behavior strengthens with higher levels of innovation climate.

Discussion
The increasing importance of innovative work behaviors in all types of business organizations has fostered researchers to search out the mechanisms that stimulate innovative work behaviors among employees. There is a consistent gap in the literature about what constitute mediating and moderating effect on the process of predicting employee innovative work behaviors through various antecedents. The present study delves into the process of promoting employee innovative work behavior through transformational leadership and motivation to learn, and the role of task complexity and innovation climate in determining the strength of the relationship, from a multi-level interactionist perspective. We found that transformational leadership substantially influences employees’ innovative work behavior. This finding is in line with previous studies that found a direct positive link between transformational leadership and innovative work behaviors (Afsar and Masood, 2018; Wang et al., 2015).

Consistent with the assumptions of the IPC, the findings further revealed mediating effects of motivation to learn and moderating effects of task complexity and innovation climate on the relationship between transformational leadership and innovative work behavior. This result reinforces the notion that transformational leadership has a stronger influence on innovative work behavior when the mediator of motivation to learn is used alone to predict the latter (Masood and Afsar, 2017). The use of motivation to learn as the mediator strengthens the predictability of transformational leadership to explain innovative work behavior from $0.336 (R^2)$ to $0.432 (R^2)$. From the tenets of transformational leadership, it seems that leaders boost followers' motivation to learn to enjoy and engage in organizational creative efforts (Ma and Jiang, 2018). The results of this study are in line with the results of research by Jyoti and Dev (2015) stating that transformational leadership has a positive effect on motivation to learn.

Transformational leadership provides autonomy to employees to learn and creates a conducive environment for individual learning. Al-Zu'bi et al. (2017) and Ayob and Zainal (2011) also found that motivation to learn has a positive influence on employee creativity. Motivation acts as a process of mobilizing one’s actions to fulfill a desired need or target’s success. Differences in individual learning motivation will play an important role in influencing employee creativity. When the employee’s cognitive abilities are high, these employees have more resources used to process information. Aligned with the assumptions of the interactionism perspective of creativity, this finding further revealed the moderating effect of task complexity and innovation climate in transformational leadership and innovative work behavior. Following the rationale of the task characteristics model, employees feel a stronger identity with the work when task seems complex and challenging.

When task complexity is high, the effect of motivation to learn on innovative work behavior strengthens because employees perceive complex nature of the tasks as challenging and inspiring (Dóci and Hofmans, 2015), and hence display greater motivation to learn new knowledge, skills and abilities to perform creatively (Coelho et al., 2018). According to the IPC, task complexity increases employees’ motivation to learn and inspires them to become more involved and engaged (Afsar et al., 2014). When task complexity is high, employees need a non-controlling leader, such as a transformational leader, to boost
their motivation to learn and make their jobs more interesting and enjoyable (Denti and Hemlin, 2012). The interactive effect of task complexity and motivation to learn on innovative work behavior is not significant. The relationship between motivation to learn and innovative work behavior does not change when task complexity is used as a predictive variable in the structured model.

We tested the moderating effects of innovation climate, and the results showed that high innovation climate at the team level tends to escalate the positive relationship between transformational leadership and innovative work behavior. Similarly, innovation climate also impacts innovative work behavior when it is tied with transformational leadership rather than when it is separated. This result is similar to the findings of Jaiswal and Dhar (2015), Si and Wei (2012) and Peng and Rode (2010), in which support for innovation further strengthened positive relationships between transformational leadership and innovative work behavior. Wang et al. (2013) found that individuals perform better in terms of creativity under transformational leaders when they perceive enough support for innovation in terms of resource availability, motivation and recognition. Therefore, from the IPC perspective, the findings ensured that creative behavior generates creative results, but the final outcome should be considered as the interactions of individual-, unit- and organizational-level contextual factors rather than a simple bi-polar outcome (Du et al., 2016; Sarros et al., 2008).

**Theoretical contributions**
The findings of study contribute to the existing literature in the following ways. First, despite the growing research on creative outcomes and innovation, few studies have focused on innovative work behavior (Du et al., 2016; Masood and Afsar, 2017; Xie et al., 2016). The findings of the study could help advance the knowledge of the interaction effects of innovative work behavior from a multi-level perspective rather considering creative outcomes alone through the exploration of the impact of transformational leadership on employees’ innovative work behavior. While earlier research has justified using the interactionist perspective to improve creative outcomes, the present study validates the applicability of interactionist approach to increase employees’ innovative work behavior in the organizational context, as it found that employees' innovative work behavior is influenced by transformational leadership and enhanced by employees’ motivation to learn, as well as the task complexity of the job.

Second, the present study considers both transformational leadership and employees’ innovative work behavior as multi-dimensional behavioral phenomena and investigates the impact of transformational leadership on creative processes, incorporating multi-level contextual factors. The findings justified the relevance of multi-level analysis for investigating employees’ behaviors from a holistic perspective, and we found that employees’ innovative work behavior was the outcome of the interaction of individual-, unit- and organizational-level factors (Ng, 2017). This study advances the existing knowledge on individual innovation by adding new evidence to the understanding of employees’ innovative work behavior, more specifically, on the dynamic interaction among different factors in organizational contexts (Choi et al., 2016). Third, among different leadership styles, research on the effectiveness of transformational leadership is still very limited and inconclusive (Ma and Jiang, 2018). Top-down leadership styles, such as paternalistic, benevolent and charismatic leadership, are more effective than value-based leaderships, such as transformational leadership (Gumusluoglu et al., 2017).

The findings of this study add new empirical evidence on the effectiveness of transformational leadership. Fourth, research in the organizational behavior and human resource management domains has been accused of not sufficiently focusing on multi-level analysis of the organizational behavioral phenomenon (Masood and Afsar, 2017).
Combining individual-, unit- and organizational-level variables, this multi-level study assesses the applicability of the IPC to improve employees’ innovative work behavior in empirical settings. The findings of the study help managers to understand employees’ innovative work behavior from a holistic perspective (Amabile and Pratt, 2016).

Managerial implications
In addition to the theoretical contributions, the study offers practical implications for managers, individuals and academics. The current research indicates that innovative work behavior in the workplace is less inclined to emerge if the organization does not focus on developing transformational leadership among managers. Findings demonstrate that transformational leadership positively impacts employees’ innovative work behavior. Therefore, managers could use the essence of transformational leadership to improve employees’ innovative work behavior in the organizational context. Transformational leaders on the foundation of optimism and enthusiasm, provide intellectual ingredients, make themselves readily available to support their followers and encourage them to work differently to discharge tasks. Thus, it is extremely important for managers to have a sound understanding about the theoretical and practical relationships that exist between transformational leadership and employee innovative work behavior. Managers should provide autonomy, growth opportunities and skill variety in the workplace to motivate employees intrinsically to learn new things at workplace, which will increase their engagement in creative and innovative pursuits. Organizations can benefit from combining interventions and practices that influence the work task design and the perception of employees about how complex a task is. Providing inspirational motivation to employees to try out challenging tasks and not being afraid of the outcomes of their ideas, innovative work behaviors can be enhanced quite considerably.

Limitations and future research
Despite this study’s theoretical and practical significance, it also has underlying limitations, which show avenues for further research in similar and different contexts. The sample used in this study consisted of employees working in organizations within the geographical boundaries of Pakistan and is relatively small which may limit the generalizability and external validity of the findings. The present study used cross-sectional data to investigate causal inferences (Henker et al., 2015). Future researchers are urged to employ a longitudinal or experimental research design to overcome the concern for causality relationships. The use of self-reported questionnaires might raise concern because informants are more likely to provide socially desirable answers than the most accurate responses. In our study, we developed the research model using prior constructs developed in western contexts. As emphasized by Zhang and Bartol (2010), we tested the model and found empirical support in an Asian context. Future studies in similar/dissimilar contexts in other parts of the world will increase the generalizability of these findings. Finally, while this study takes into account transformational leadership as a facilitator of innovative work behavior, it could not take into account a wide array of other leadership styles that can potentially enhance employee innovative work behaviors. Past research has, for instance, identified empowering leadership, inclusive leadership and authentic leadership as leadership styles that promote innovative behaviors (Valsania et al., 2016; Zhang and Bartol, 2010). It is recommended that future studies test how these leadership styles enhance innovative work behavior. In addition, empowerment of followers has been highlighted as an essential ingredient to increase innovative work behavior – future research may thus consider the role of psychological empowerment.
References


Further reading


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