



Transformational leadership, innovation climate, creative self-efficacy and employee creativity: A multilevel study



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ABSTRACT

Highlighting the implications of transformational leadership, the study examines the role of transformational leadership in predicting employee creativity. The study also investigates the mediating role of innovation climate and moderating role of creative self-efficacy. A study was carried out on a sample included a dyad of 372 employees and their immediate supervisors. The findings indicate that transformational leaders can foster a climate for innovation that promotes employee creativity. Further, a significant moderating role of creative self-efficacy was found in the relationship between innovation climate and employee creativity. The findings reveal that employees with high creative-self-efficacy resort to creative behavior when they receive a supportive innovation climate.

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1. Introduction

Today's business environment has forced organizations to rejuvenate old products and services to meet the rapidly changing customer demands. New ideas, products and services have become the source for competitive advantages and business opportunities. Regardless of the industry type, product and service innovation have become a critical driver for long-term business success (Hon, 2012). Business organizations that offer only old products and services may no longer be able to survive, particularly in the developing economies, since innovation is continually emphasized (Gautschi, 2001). Thus, innovation has become an essential tool to compete with the changing global business environment.

Studies have shown that the service sector contributes to more than 70% of the gross domestic product (GDP) of the world's developed economies, and hence plays a significant role in the propagation and consumption of innovation and creativity (Ostrom et al., 2010). This case is not different in the context of developing economies like India, which largely depends on the service sector (Thakur and Hale, 2013). The success of the service industry predominantly relies on innovative services (Ostrom et al., 2010). Thus, innovative services play a vital role in shaping value creation (Moller et al., 2008) and means for gaining a larger market share (Chapman et al., 2003). In particular, the tourism industry

has emerged as one of the major service segments (Narayan et al., 2009) that needs to be more innovative in its service orientation.

The World Tourism Organization (UNWTO) reported that the tourism industry is witnessing a continuous expansion by becoming the fastest growing economic sector in the world (WTO, 2013). According to the Indian Brand Equity Foundation (IBEF), the Indian tourism industry has turned into the driving force for the service sector in the country and has achieved the 12th rank among 184 countries in terms of the total contribution made to the Gross Domestic Product (GDP) in the year 2012. This sector contributed \$34.7 billion to the GDP in 2012 (IBEF, 2013). A substantial growth in the arrival of international tourists and a growing number of Indian tourists traveling within the country has made India one of the most preferred tourist destinations for international and domestic tourists.

Located in the foothills of the Himalayas, Uttarakhand has been referred to as 'Dev Bhoomi' (land of god), which carries a diverse and rich culture with monuments of historical importance. Naturally imbued with fresh air, pure water, adverting mountains, wildlife parks and several hill stations, it is the center of attraction for national as well as international tourists. In addition to several wildlife parks, hill stations and mountain vistas, trekking routes and pilgrimage places that have allured international and domestic tourists to the state, it has been voted as 'the best emerging destination' of South Asia (IBEF, 2013). Further, the state has witnessed a significant growth in the compound annual growth rate (CAGR) of 9.6% during 2001–2011 for domestic tourist arrivals and foreign tourist arrivals (FTA) has a CAGR of 8.5% during 2001–2011 (IBEF, 2013).

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The growth prospects and future industry projection indicate that the Indian tourism industry has enough potential to become a global leader in this sector. Tourist hotels, which are an important component of the tourism industry, can act as a catalyst for this growth by providing novel tourism experiences (IBEF, 2013) that enhance customer value by offering standard facilities and creative services. Thus, the role of service innovation becomes more crucial in a highly interactive business environment like hotels where customers spend their leisure time.

Innovation and creativity are intrinsically linked (Robinson and Beesley, 2010), where creativity is the emergence of new ideas (Beesley and Cooper, 2008), innovation requires the implementation of those creative ideas (Robinson and Beesley, 2010). Thus, to develop a sound business framework, organizations must promote creative behavior among their employees (Nieves et al., 2014).

Nourishing creativity among employees in view of innovative results is a primary concern for leaders. Shalley et al. (2004) argued that the employee creativity is attributed to the individual factors and the context in which they work. Similar to this, previous studies have identified several antecedents of employee creativity (see Table 1).

Creativity researchers have established that leaders can have a deep contextual impact on an employee's performance to deliver creative and innovative results (Shalley and Gilson, 2004). This has been studied as the supervisor's leadership style (Wang et al., 2013; Gupta et al., 2012; Zhang and Bartol, 2010; Gong et al., 2009). For example, Amabile et al. (2004) reported that a leader's behavior is a key factor in the work environment that determines creativity among the individuals. Further, individual level variables play a significant role in nourishing employee creativity (Shalley and Gilson, 2004; Sun et al., 2012). The present study utilizes both approaches to introduce a comprehensive model to predict employee creativity.

For innovation and creativity, organizations need to be blended with leaders who can address complex problems with innovative solutions (Williams and Foti, 2011). Fostering employee creativity through a specific leadership style has been the focus of many researchers (e.g., see Reiter-Palmon and Illies, 2004; Mumford et al., 2002; Gupta et al., 2012). In recent creativity studies, transformational leadership has emerged as a strong predictor of employee creativity (see Wang et al., 2013; Wang and Rode, 2010; Gong et al., 2009; Gumusluoglu and Ilsev, 2009a). For example, transformational leadership engenders a supportive innovation climate (Jung et al., 2003) and mobilizes the necessary contextual resources for subordinates to exert creative behavior. However, very few studies have addressed the subject of creativity in the Indian context. For example, Gupta et al. (2012) has found significant impact of leaders on employee creativity.

In their study on Indian setting, Sinha and Sinha (1990) have found that in India, the leader-subordinate relationship is guided by deference (Shraddha) and affection (Sneh) and subordinates always seek support, assistance, attention and suggestion from leaders even when they are capable enough (Sinha, 2008). Thus, while demonstrating the four behavioral components of transformational leadership i.e., inspirational motivation, intellectual stimulation, idealized influence and individualized consideration (Avolio et al., 1999) a transformational leader can easily fulfill these subordinates' needs and encourage them for creative performance (Gupta and Singh, 2013).

In addition, studies have empirically shown that supportive innovation climate motivates for higher levels of creativity among employees (Charbonnier-Voirin et al., 2010; Wang 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 multilevel phenomenon (Wang et al., 2013; Chen et al.,

2013). Recent multilevel studies have demonstrated that individual creativity positively relates to group level variables including leadership style, supportive coworker (Hon, 2011), support for innovation (Chen et al., 2013). These advance findings signify the importance of multilevel consideration of innovation climate. However, as innovation climate is a broad concept, very limited studies have address cross-level issues, including whether group climate motivates individual level creativity (Charbonnier-Voirin et al., 2010; Wang et al., 2013).

Past studies have also found that an employee's creative self-efficacy has a significant effect on the individual's creative behavior (Tierney and Farmer, 2002; Gong et al., 2009). In their study, Gong et al. (2009) found a significant mediating role of creative self-efficacy in predicting employee creativity. Further, although Bandura (1997) has highlighted the reciprocal relationship between creative behavior and creative self-efficacy, there is hardly any study that investigates the interaction effect of creative self-efficacy in predicting employee creative behavior. Richter et al. (2012) also recommended to study the interaction effect of creative self-efficacy. They also believed that a strong belief in creative-self extensively motivates individuals to seek consultation and guidance in applying creative behavior. In response to (Richter et al., 2012), this study is an attempt to address this gap by investigating the moderating function of creative self-efficacy in the relationship between innovative climate and employee creativity.

Utilizing both, individual-level and group-level pathways in the present model, the present study will add to the existing literature and managerial practices in several ways. First, the main contribution of the present research is the delineation of multilevel effects of group-level variables on individual-level variables to foster creative performance. The study expect that transformational leadership behavior of the group supervisor foster a positive perception about the group innovation climate among the followers which in turn encourage them to perform creatively. Second, we introduce creative self-efficacy as a moderating mechanism to promote individual creativity. The findings of the study will guide to the managers who were constantly devoting their managerial and financial resources in promoting creativity among their employees. The next sections present theoretical support to build up the hypotheses followed by research method, data analysis and results. Finally, we discuss, implications, conclusions and limitations of the study.

2. Theoretical foundation and hypotheses formulation

2.1. Transformational leadership and innovation climate

Transformational leadership has been conceptualized as a multi-dimensional concept (Bass, 1985). In their study, Avolio et al. (1999) came up with a more precise concept of transformational leadership that fused individualized consideration, idealize influence and intellectual stimulation inspirational motivation. Using *idealize influence*, leader inspires the inherent thoughts of followers by acting as a role model to gain respect, admiration and loyalty, which generates a sense of collectivity among the followers. Through one-to-one relationships with each follower in the collective setting, the leader institutionalizes the confidence of *individualized consideration* in which he is always concerned about the needs of each follower. By *inspirational motivation*, a leader not only steers a vision for the future, but also shows the path for achieving goals and helps the followers to realize that they can do it. Through intellectual stimulation, the leader makes available the necessary cognitive resources to the followers and stimulates them to work differently (Avolio et al., 1999).

Table 1
Antecedents of employee creativity.

Author/authors	Antecedents of employee creativity
Hon et al. (2013) Hon (2012) Hon (2011) Wong and Ladkin (2008) Diliello et al. (2011) Wang et al. (2014), Richter et al. (2012), Zhou et al. (2012), Diliello et al. (2011), Tierney and Farmer (2011), Lemons (2010), Gong et al. (2009) Wang et al. (2014) Gong et al. (2009) Wong and Pang (2003)	Challenge-related stress, hindrance-related stress, task feedback Competency-based pay, individual characteristics Employee self-concordance Job-related motivators Support for creativity Creative self-efficacy
Gumusluoglu and Ilsev (2009a) Kim et al. (2009) Binyamin and Carmeli (2010) Zhou et al. (2012) Wang et al. (2014), Ma et al. (2013), Wang et al. (2013), Gupta and Singh (2013), Gupta et al. (2012), Slatten et al. (2011), Wang and Rode (2010), Gumusluoglu and Ilsev (2009a), Gong et al. (2009), Reiter-Palmon and Illies (2004) Ma et al. (2013) Sousa and Coelho (2011) Wang et al. (2013), Slatten et al. (2011), Wang and Rode (2010), Cangemi and Miller (2007) Wang and Rode (2010)	Creative role identity, job complexity Employee learning orientation Training & development; support and motivation from the top, open policy, recognition; autonomy and flexibility Intrinsic motivation, psychological needs, support for innovation Proactive personality, job creativity requirement, supervisor support Human resource management Problem-solving demand, intrinsic motivation Leadership Knowledge sharing and self-efficacy Personal values, organizational commitment, Customer orientation Innovation climate Identification with leader

Note: Literature of the last 10 years was searched with the key word 'employee creativity' from EBSCO, ScienceDirect, PROQUEST and Google Scholer database.

An organization's innovation climate is defined as a set of employee perceptions about the organization's work environment that encourages risk-taking behavior, allocates sufficient resources and provides a challenging work environment for using a creative approach at work (Scott and Bruce, 1994). The construct innovation climate has received a great amount of attention by behavioral researchers (see Sarros et al., 2008) since it plays a vital role in shaping the creative behavior of employees. For example, Cerne et al. (2013) found that a supportive innovation climate holds the notion that stimulating a supporting and safe climate promotes employee creativity.

Transformational leadership itself is an important antecedent of organizational climate (see Jung et al., 2003; Gumusluoglu and Ilsev, 2009a). For instance, Jung et al. (2003) believed that transformational leaders tend to establish a climate that empowers their followers and provides enough support for innovation. It can be observed from the theory of transformational leadership that leaders possess the necessary essentials that are instrumental in making innovation oriented work climate and inspire their followers by motivating them to learn and develop new ways of doing things.

For building positive employee' perception about supportive innovation climate, the four unique behavioral components of transformational leadership demonstrated by immediate supervisors, i.e., inspirational motivation, individualized consideration, intellectual stimulation and idealized influence (Avolio et al., 1999) positively influence the subordinates' interpretations of the work environment (Jung et al., 2003). For instance, through inspirational motivation, the leader signals to subordinates about the expectations for potential creative behavior and organization's intention of being supportive for innovation and hence encourage to take risks and champion innovation (Wang et al., 2013). Similarly, through intellectual stimulation, the leader provides necessary cognitive inputs to subordinates to generate new ideas and encourage them for the experimentation of those ideas to find better solutions for the existing problems (Bass et al., 2003). Leaders' individualized consideration reflects leaders' commitment to fulfill the developmental needs of each subordinate. Finally, through idealize influence, a transformational leader demonstrates appropriate behavior to project himself as a creative role model and cater the implementation of innovative changes (Bass et al., 2003).

Further, in a study on an Indian sample, Krishnan (2004) has found that transformational leadership is the best predictor of friendliness, which is considered to be an inherent characteristic of supportive innovation climate (Scott and Bruce, 1994).

Thus, conceptually a close relationship exists between transformational leadership and innovation climate. Although Jung et al. (2003) has found empirical support for this relationship while considering organization as a whole; yet they call for the examination of such relationship at the subunit level. This argument is also supported by the fact that individuals' perception of climate arises from his/her own interpretation of organizational policies and practices (Scott and Bruce, 1994). As an immediate supervisor is a salient representative of the organization, subordinates working under the same supervisor tend to generalize their perceptions of supervisor to their organization at large. Thus, the leadership behavior of immediate supervisors is an important factor determining subordinates' perceptions of the work climate (Wang et al., 2013). The social interactionist approach also posits that group members' observed leadership behaviors and group relation affect group members' perceptions of an "innovation climate" (Scott and Bruce, 1994, p. 581). Given the effects of leadership behaviors on subordinates' interpretation of their work climate, employees working under transformational leaders are likely to have higher levels of innovation climate perceptions. Therefore, this study hypothesizes the positive relationship between transformational leadership and innovation climate at group level. Accordingly, we propose Hypothesis 1.

Hypothesis 1. Transformational leadership positively relates to innovation climate.

2.2. Innovative climate and employee creativity

Employee creativity is an individual level phenomenon defined as a production of novel and organizationally valued ideas (Amabile, 1995). An organization's climate has been identified as one of the most dominant predictors of employee creativity (see Mumford et al., 2002) and a supportive climate in this instance is an integral aspect that can help employees maintain their creative path and utilize their creative potential (Williams and Foti,

2011). More specifically, an organization's supportive innovation climate can positively influence an employee's creative and innovative behavior (Jung et al., 2003).

It is believed that individuals of groups that have successfully developed innovation climate are exposed to the policies and practices that welcome the expression of new ideas (Charbonnier-Voirin et al., 2010). Cerne et al. (2013) have indicated that support for innovation plays a significant mediating role in stimulating creativity among individuals. Thus, individuals working in a climate that values experimentation and tolerates occasional flaws, exhibits higher levels of creative behaviors. Consistent with the findings of previous studies, Wang et al. (2013) also found that innovation climate predicts employee creativity more substantially when the innovation climate strength is high. Additionally, to get support from their group, members may develop and adopt the behaviors expected by the group's innovation climate (Dragoni, 2005). Thus, it is rational to propose that group's innovation climate will have a positive relationship with employee creativity.

Hypothesis 2. Innovative climate has a positive relationship with employee creativity

2.3. Mediating role of innovation climate

Behavioral researchers are often interested in the relationship between leadership and employee creativity (Liu et al., 2012; Gupta et al., 2012; Zhang and Bartol, 2010; Reiter-Palmon and Illies, 2004). Further, creativity scholars have also shown a growing interest in studying the relationship between transformational leadership and employee creativity. For example, Wang et al. (2013, 2014) and Gumusluoglu and Ilsev (2009a) have found that transformational leaders play an important role in predicting employee creativity. Further, past studies have established that transformational leaders develop an innovation climate (Jung et al., 2003) that determines the mobilization of organizational resources and motivate individuals to work toward creative outcomes (Moghimi and Subramaniam, 2013). The relationship between these contextual factors, i.e., transformational leadership and innovation climate, have led creativity scholars to investigate the indirect effect of transformational leadership on employee creativity through innovation climate (Wang et al., 2013; Wang and Rode, 2010). The results of these studies are mixed. For example, in their study on a Turkish sample Gumusluoglu and Ilsev (2009b) found an insignificant mediating effect of innovation climate in between transformational leadership and employee creativity. In another study on a Chinese sample Gumusluoglu and Ilsev (2009a) found support for the mediating role of innovation climate between the same. However, in their both studies, Gumusluoglu and Ilsev failed to demonstrate the convergent validity for the full version of Scott and Bruce' innovation climate scale (Scott and Bruce, 1994) and hence their results are debatable.

In a recent study, Wang et al. (2013) also found that the relationship between transformational leadership and employee creativity is mediated by organizations' innovation climate. Scott and Bruce (1994) have observed that employees' perceptions about the positive climate which provides easy accessibility of organizational resources, mediates the effects of leadership on employee' creative performance. The existence of such climate at the group level, facilitates an edge to the transformational leaders in promoting subordinate's performance (Charbonnier-Voirin et al., 2010). "An individual's perception about innovation climate emerge out of the interaction of group members and supervisor" (Scott and Bruce, 1994, p. 586). As an immediate supervisor is a salient representative of the organization, subordinates working under the same supervisor tend to generalize their perceptions of supervisor to their organization at large (Scott and Bruce, 1994). Based

on the above literature, we propose that innovation climate of the group mediates the relationship between transformational leadership and employee creativity.

Hypothesis 3. Group innovation climate mediates the relationship between transformation leadership and employee creativity.

2.4. Creative self-efficacy as a moderator

Creative self-efficacy has been defined as the degree of an individual's belief about his or her ability to produce creative outcomes (Tierney and Farmer, 2002). Based on the *self-efficacy* theory (Bandura, 1997), the concept of creative self-efficacy has been derived from the notion of *belief* about *self-capacity* in terms of the essential knowledge, skill and ability required for a specific creative performance. In their study on manufacturing settings, Tierney and Farmer (2002) were the first to study the role of creative self-efficacy in determining employee creativity in an organizational setting. It is the intensifying role of creative self-efficacy in determining employee creativity that has stimulated recent creativity studies to showcase the role of creative self-efficacy in mobilizing the creative effort among employees (Gong et al., 2009; Tierney and Farmer, 2011; Diliello et al., 2011; Wang et al., 2013).

More specifically, in a recent study, it was identified that employees with higher creative self-efficacy are more likely to mobilize their creative potentials into creative outcomes (Diliello et al., 2011). Further, the creative self-efficacy plays an intensified role in increasing employee creativity (Wang et al., 2013) and past researchers have investigated it as a mediating variable between transformational leadership and employee creativity (Gong et al., 2009; Wang et al., 2013; Mittal and Dhar, 2015). However, past researchers have not shown interest in investigating the moderating role of creative self-efficacy. Virtually no studies have investigated the moderating role of creative self-efficacy between innovation climate and employee creativity.

The dynamics of the self-efficacy theory in determining creative performance could be understood in a way that self-efficaciousness brings intrinsic belief and motivation to perform the task successfully (Bandura, 1997). The potential arguments for the moderating role of creative self-efficacy is that although in an organizational setting, individual behavior has been subjected to the contextual factors; yet an individual's belief about creative self caters positive confidence and zeal to exert creative behavior (Tierney and Farmer, 2011).

Further, according to Bandura (1997) the self-efficacy theory falls between general to specific continuum. Normally, generalized self-efficacy is stable. As it moves toward specificity, self efficacy becomes sensitive toward personal and contextual factors (Bandura, 1997). In Bandura's two continuum concept, "the creative self-efficacy theory falls within the continuum of specificity" (Tierney and Farmer, 2002, p. 1138). Thus, creative self-efficacy is subjected to the personal and contextual factors (Yang and Cheng, 2009; Chong and Ma, 2010; Mathisen, 2011) and may fall within the high and low continuum, which may moderate the mechanisms adopted for fostering creativity among the employees.

Thus, it will be insightful here to investigate the effects of high vs low creative self-efficacy on the mediating path of transformational leadership and innovation climate on employee creativity and therefore, we propose that high creative self-efficacy strengthen the effects of innovation climate on employee creativity (see Fig. 1).

Hypothesis 4. Creative self-efficacy moderates the effect of innovation climate on employee creativity in a way that the relationship is strengthened when creative self-efficacy is higher rather than lower.

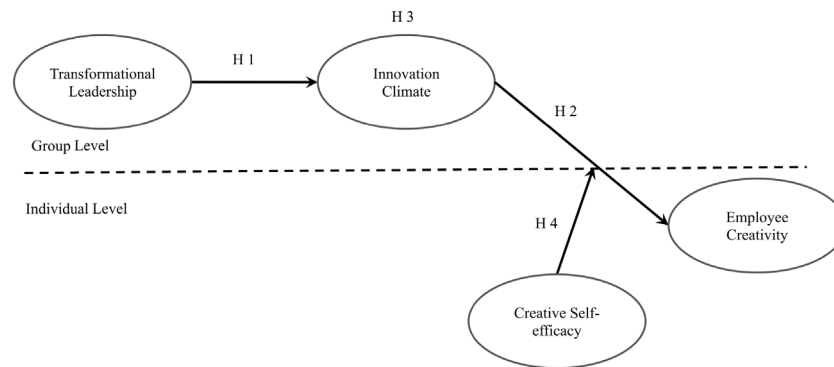


Fig. 1. Hypothesized model.

3. Research method

3.1. Sample selection and data collection

The study adopted a threefold data collection process. For the purpose of this study, initially, 18 tourist hotels located in the state of Uttarakhand, Republic of India were contacted. To stipulate their participation in the study, a presentation to the top management of each hotel was delivered to inform them about the need and significance of the study, emphasizing its managerial implications. The hotel authorities from 16 hotels showed their willingness to participate in the study. Next, with the cooperation of the management, a special orientation session for the customer contact employees and their immediate supervisors was organized at each participating hotel. 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. The questionnaires handed to the customer contact employees consisted of items for transformational leadership, innovation climate and creative self-efficacy, whereas the supervisors provided information regarding the creative behavior of their subordinates. Total 500 questionnaires to customer contact employees and 500 questionnaires to supervisors were given. The aggregate sample included a dyad of 372 customer contact employees and their immediate supervisors with a response rate of 74.4%, in which 46 supervisors responded to the questionnaire on the creative behavior of 372 subordinates.

3.2. Measures

All the study variables were measured on a seven-point Likert scale, with 1 representing strongly disagree to 7 representing strongly agree. We translated the English scales into Hindi. To verify the translation, a bilingual expert conducted the translation from English to Hindi and then back to English to ensure the quality of the conversation.

To measure employees' perception about their leader's transformational leadership style, a short version of the multifactor leadership questionnaire (MLQ) (Avolio et al., 1999) was used, which included four items for each behavioral component, i.e., individualized consideration, idealized influence, intellectual stimulation and inspirational motivation ($\alpha = 0.94$). A sample item is "My supervisor articulates a compelling vision of the future" (inspirational motivation). The items of idealized influence (attributed) have not been included in the study because past studies have not considered it as an aspect of leadership behavior (Kark et al., 2003;

Wang and Rode, 2010). Although the literature signifies that the TL construct consists of four distinct components, consistent with the recent leadership studies, we found a high inter-correlation between the four dimensions of transformational leadership where the average r is 0.72 (Gumusluoglu et al., 2013; Wang et al., 2013). This leads to the construction of a higher order construct (Li et al., 2013). Hence, we combined all the items into a single scale. A confirmatory factor analysis (CFA) of the final scale yielded a good fit ($\chi^2(93) = 251.16$, GFI = 0.922, CFI = 0.961, NFI = 0.944, RMSE = 0.068). Previous studies have found that leaders direct the behavior of subordinates toward the group as a whole (Wang and Walumbwa, 2007; Wang et al., 2013). Thus, the transformational leadership has been modeled as a group level construct and the subordinate rated transformational leadership was aggregated to formulate a group level transformational leadership. A one-way ANOVA showed transformational leadership to have a high between group variation and within-group agreement ($F = 13.18$, $p < 0.001$; average $r_{wg} = 0.83$; ICC1 = 0.43; ICC2 = 0.69).

To assess the innovation climate, we adopted Scott and Bruce's (1994) 16-item innovation climate scale. A sample item is "Creativity is encouraged here" ($\alpha = 0.93$). An individual's perception about innovation climate represents a collective mental model (Hofmann et al., 2003; Wang et al., 2013). Thus, innovation climate has been aggregated at group level (For detail items see Table 2). A one-way ANOVA showed innovation climate to have a significant between group variation and within-group agreement ($F = 6.64$, $p < 0.001$; average $r_{wg} = 0.78$; ICC[1] = 0.45; ICC[2] = 0.67).

A three-item scale, developed by Tierney and Farmer (2002), was used to measure creative self-efficacy. A sample item is "I feel that I am good at generating novel ideas" ($\alpha = 0.87$).

To measure employee creativity, we adopted a four-item scale used by Tierney and Farmer (2011). This scale was originally developed by Tierney et al. (1999) to assess the creative performance of the employees through their supervisors. A sample item was "This subordinate identifies opportunities for new ways of dealing with work" ($\alpha = 0.93$).

Following recent creativity studies, we controlled for employees' age, gender, education and experience due to their confound relation that may lead to task domain expertise or knowledge, which in turn could play role in determining creative performance (Gong et al., 2009; Richter et al., 2012). The study also controlled for supervisors' age, gender and education.

4. Results

4.1. Convergent and discriminant validity

To examine the fit of the four-factor model, we performed a CFA before testing the hypothesis. The four-factor model included transformational leadership, innovation climate, creative

Table 2

Overall reliability of the constructs and factor loadings of indicators.

Construct & indicators	A. V. E.	Cronbach's α /CR	Loading	t-Value
Transformational leadership	0.525	0.94/0.946		
My supervisor talks to us about his/her most important values and beliefs			0.753	8.697***
My supervisor expresses his/her confidence that we will achieve our goals			0.719	10.091***
My supervisor emphasizes the importance of having a collective sense of mission			0.689	9.879***
My supervisor has strong purpose			0.633	9.444***
My supervisor expresses his/her confidence that we will achieve our goals			0.640	9.502***
My supervisor articulates a compelling vision of the future			0.644	9.529***
My supervisor talks optimistically about the future			0.615	9.289***
My supervisor talks enthusiastically about what needs to be accomplished			0.661	9.663***
My supervisor seeks differing perspectives when solving problems			0.681	9.818***
My supervisor re-examines critical assumptions, whether they are appropriate			0.772	10.437***
My supervisor got me to look at the task from many different angles			0.701	9.965***
My supervisor suggests new ways of doing work			0.761	10.363***
My supervisor spends time in teaching and coaching me			0.800	10.603***
My supervisor helps group members to develop their strengths			0.809	10.653***
My supervisor treats me as an individual rather than as a member of the group			0.811	10.668***
My supervisor considers me as having different needs			0.790	10.544***
Innovation climate	0.511	0.93/0.930		
Creativity is encouraged here			0.773	11.696***
Our ability to function creatively is respected by the supervisor			0.776	11.728***
Around here, people are allowed to try to solve the same problems in different ways			0.794	11.877***
The main function of members in this organization is to follow orders, which come down through channels. (Reversed)			0.816	12.051***
Around here, a person can get in a lot of trouble by being different. (Reversed)			0.804	11.957***
This organization can be described as flexible and continually adapting to change			0.822	12.102***
A person cannot do things that are too different around here without provoking anger. (Reversed)			0.784	11.792***
The best way to get along in this organization is to think the way the rest of the group does. (Reversed)			0.654	10.566***
People around here are expected to deal with problems in the same way. (Reversed)			0.774	11.704***
This organization is open and responsive to change			0.761	11.598***
The people in charge around here usually get credit for others' ideas			0.554	9.437***
In this organization, we tend to stick to tried and true ways			0.615	10.149***
This place seems to be more concerned with the status quo than with change			0.573	9.658***
The reward system here encourages innovation			0.599	9.969***
This organization publicly recognizes those who are innovative			0.612	10.111***
The reward system here benefits mainly those who don't rock the boat. (Reversed)			0.645	10.474***
Creative self-efficacy	0.766	0.87/0.874		
I have confidence in my ability to solve problems creatively			0.833	12.504***
I feel that I am good at generating novel ideas			0.833	12.498***
I have a knack for further developing the ideas of others			0.889	12.954***
Employee creativity	0.874	0.93/0.935		
This subordinate identifies opportunities for new ways of dealing work			0.846	12.629***
This subordinate seeks new ideas and ways to solve problems			0.788	12.133***
This subordinate generates novel, but operable work-related ideas			0.975	13.554***
This subordinate demonstrates originality in his/her work			0.975	13.553***

Notes: AVE represents the average variance extracted.

CR represents construct or composite reliability.

*** $p < 0.001$.

self-efficacy and employee creativity. The proposed model demonstrated an acceptable fit (χ^2 (673) = 997.75, $p = 0.000$, GFI = 0.885, CFI = 0.967, NFI = 0.907, RMSEA = 0.036). All the factor loadings were found to be significant at 0.001 levels (see Table 2), demonstrating a convergent validity. In order to examine the discriminant validity, we compared the four-factor model with seven alternative models; four three-factor models, two two-factor and one one-factor model. The first two-factor model was obtained by combining innovation climate, creative self-efficacy and employee creativity into one latent factor, because in the four-factor model, these three had the highest correlation. The second two-factor model was obtained by combining transformational leadership, innovation climate and creative self-efficacy into one latent factor, because the data for these three variables were taken from employees (subordinates). The one-factor model was constituted by blending all the items of the four constructs into a single factor.

The distinctiveness of the models was based on chi-square statistics and the fit indices of RMSEA and CFI. The CFA results for the alternative models (see Table 3) showed a poorer fit than the proposed four-factor model. Additionally, Harman's one-factor test was performed to check the common method bias. The 16 items of

TL, 16 items of IC and the three items measuring CE were entered in a principal component factor analysis. The results yielded that the first factors in the model explained 35.86% of the variance. Therefore, here, the common method bias was not an issue.

Further, we also conducted variance inflation factors (VIF) test to detect the presence of multi-collinearity (Neter et al., 1996). The values of VIF ranged from 1.241 to 1.317, which show that multi-collinearity is not an issue in the study. Table 4 presents the mean, standard deviation and correlation among all the study variables.

4.2. Hypothesis testing

A multilevel Hierarchical Linear Modeling (HLM) analysis was conducted to test the hypotheses. (Wang et al., 2011). Multilevel analysis has been found to be more appropriate for the analysis of cross-level data (Hox, 2002). First, a null model was analyzed to check the presence of between-group variance in employee creativity and test the significance of the level 2 residual variance. The results of the null model suggested that the between-group variance is significant ($\sigma^2_{u0} = 0.298$, $p < 0.0001$). The ICC1 value

Table 3
Results of confirmatory factor analysis.

Model	χ^2	df	CFI	RMSE
Four factor model	997.75	673	0.967	0.036
Three factor model Transformational leadership and innovation climate were blended	3197.99	684	0.748	0.099
Three factor model Innovation climate and creative self-efficacy were blended	2451.48	691	0.823	0.083
Three factor model Employee creativity and creative self-efficacy were blended	1985.03	693	0.870	0.071
Three factor model Transformational leadership and employee creativity were blended	2043.31	688	0.864	0.073
Two factor model Innovation climate, employee creativity and creative self-efficacy were blended	2795.28	693	0.789	0.090
Two factor model Transformational leadership innovation climate, and creative self-efficacy were blended	4043.97	686	0.663	0.115
One factor model Transformational leadership, innovation climate, employee creativity and creative self-efficacy were blended	4452.17	691	0.623	0.121

df, degree of freedom; CFI, confirmatory fit indices; RMSE, root mean square error of approximation.

Table 4
Correlations, means and standard deviations.

N = 372	M	S.D.	1	2	3	4	5	6	7	8	8	10	11
1. Age	2.07	0.62											
2. Gender	1.13	0.34	0.001										
3. Education	2.51	1.03	0.205**	0.029									
4. Experience	2.10	0.80	0.210**	-0.003	0.173**								
5. Supervisor' age	1.45	0.68	0.012	0.013	0.005	0.003							
6. Supervisor' gender	1.15	0.36	0.023	-0.008	0.022	0.006	0.017						
7. Supervisor' education	1.84	0.76	0.011	0.006	0.017	0.019	0.210**	0.014					
8. Transformational leadership	2.98	1.81	0.065	-0.076	0.133*	0.328**	0.031	0.003	0.021	0.525			
9. Innovation climate	2.46	1.52	0.020	-0.052	0.077	0.072	0.019	0.007	0.151*	0.356**	0.511		
10. Creative self-efficacy	2.70	1.70	-0.011	-0.093	0.253**	-0.090	0.009	0.015	0.021	0.087	0.161**	0.766	
11. Employee creativity	2.16	1.60	0.048	-0.116*	0.180**	-0.036	0.022	0.018	0.023	0.197**	0.438**	0.731**	0.874

* $p < 0.05$.

** $p < 0.01$.

The bold numbers are the AVEs.

Age: 1 = below 20 years (13.2%), 2 = 20–29 years (68.5%), 3 = 30–39 years (15.6%), 4 = 40 years and above (2.7%).

Gender: 1 = male (86.3%), 2 = female (13.7%).

Education: 1 = below higher secondary school (18%), 2 = higher secondary school (33.1%), 3 = senior secondary (30.9%), 4 = under graduate (15.6%), 5 = post graduate (2.4%).

Experience: 1 = below 1 year (23.9%), 2 = 1–5 years (44.9%), 3 = 5–10 years (28%), 4 = 10 years and above (3.2%).

Supervisor' age: 1 = 21–30 years (65.2%), 2 = 31–40 years (23.9%), 3 = 41–50 years (10.9%).

Supervisor' gender: 1 = male (84.8%), 2 = female (15.2%).

Supervisor' education: 1 = diploma (36.96%), 2 = graduate (41.30%); 3 = post graduate (21.74%).

indicated that 30% of the variance in employee creativity occurred between groups, thus fulfilling the condition of the multi-level analysis (Fig. 2).

Tables 5 and 6 contain the results of the HLM analysis. Hypothesis 1 proposed that transformational leadership positively relates

to innovation climate. As shown in Table 5, transformational leadership is positively related to innovation climate ($\gamma = 0.30$, $SE = 0.079$, $p < 0.0001$, Step 1), supporting Hypothesis 1. As shown in Table 5, innovation climate is positively related to employee creativity ($\gamma = 0.33$, $SE = 0.087$, $p < 0.001$, Step 3). This regression

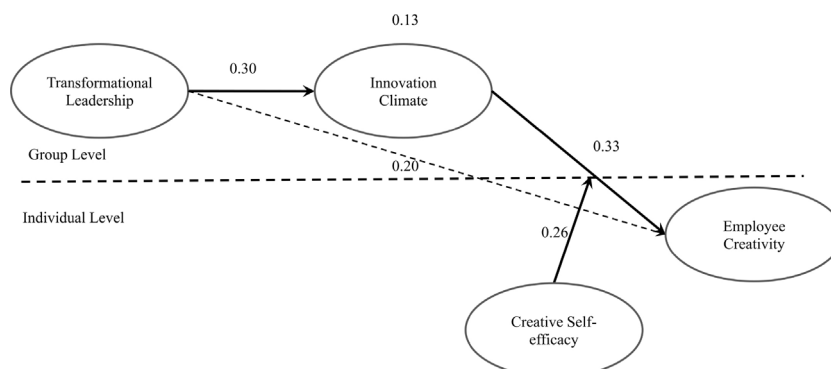


Fig. 2. Path results of hypothesized model.

Table 5
Results of hierarchical linear modeling.

Variable	Γ	SE	t	Within groups R^2	Between groups R^2
Step 1 → DV = innovation climate (intercept = 0.21^{**})					
<i>Level 1 variables (n = 372)</i>					
Age	−0.073	0.082	−0.90	0.11	
Gender	0.019	0.128	0.16		
Education	0.028	0.043	0.66		
Experience	0.013	0.065	0.21		
<i>Level 2 variables (n = 46)</i>					
Supervisor' age	0.126	0.043	2.54 ^{**}	0.16	
Supervisor' gender	0.021	0.56	0.44		
Supervisor' education	0.114	0.39	2.10 ^{**}		
Transformational leadership	0.304	0.079	3.38 ^{***}		
Step 2 → DV = employee creativity (intercept = 0.16^{**})					
<i>Level 1 variables (n = 372)</i>					
Age	−0.110	0.086	−1.28	0.02	
Gender	−0.153	0.135	−1.13		
Education	0.147	0.046	3.17 ^{**}		
Experience	0.037	0.068	0.55		
<i>Level 2 variables (n = 46)</i>					
Supervisor' age	0.009	0.028	0.11	0.11	
Supervisor' gender	0.018	0.032	0.36		
Supervisor' education	0.107	0.039	1.61		
Transformational leadership	0.203	0.091	2.13 ^{**}		
Step 3 → DV = employee creativity (intercept = 0.13^{**})					
<i>Level 1 variables (n = 372)</i>					
Age	−0.036	0.078	−0.46	0.09	
Gender	−0.154	0.121	−1.27		
Education	0.143	0.041	3.42 ^{**}		
Experience	0.037	0.062	0.61		
<i>Level 2 variables (n = 48)</i>					
Supervisor' age	0.017	0.103	0.26	0.15	
Supervisor' gender	0.008	0.173	0.16		
Supervisor' education	0.093	0.092	1.01		
Transformational leadership	0.130	0.082	1.58		
Innovation climate	0.332	0.087	4.10 ^{**}		

Note:

^{**} $p < 0.001$.

^{***} $p < 0.0001$.

equation controlled transformational leadership and supported Hypothesis 2.

Hypothesis 3 proposed that Innovative climate mediates the relationship between transformation leadership and employee creativity. This hypothesis was tested through the asymmetric confidence limit method with the help of a RMediation package (Tofighi

and MacKinnon, 2011). The RMediation package computes the confidence intervals (CIs) for a nonlinear function of the model parameters in both single-level and multilevel models (Tofighi and MacKinnon, 2011). The results of cross level mediation were summarized in the step 2 and step 3. Transformational leadership was positively related to employee creativity ($\gamma = 0.20$, $SE = 0.091$,

Table 6
Results of hierarchical linear modeling.

Variable	Γ	SE	t	Within groups R^2	Between groups R^2
Step 4 → DV = employee creativity (intercept = 0.06[*])					
<i>Level 1 variables (n = 372)</i>					
Age	0.087	0.049	1.77	0.70	
Gender	−0.043	0.079	−0.55		
Education	−0.014	0.028	−0.52		
Experience	0.038	0.039	0.96		
Creative self-efficacy	0.662	0.030	21.48 ^{***}		
<i>Level 2 variables (n = 46)</i>					
Supervisor' age	0.015	0.113	0.022	0.78	
Supervisor' gender	0.007	0.182	0.13		
Supervisor' education	0.083	0.092	0.80		
Transformational leadership	0.062	0.044	1.45		
Innovation climate	0.218	0.047	5.02 ^{***}		
<i>Cross-level effects</i>					
Innovation climate × creative self-efficacy	0.261	0.030	8.45 ^{***}		

Note:

^{*} $p < 0.05$.

^{***} $p < 0.0001$.

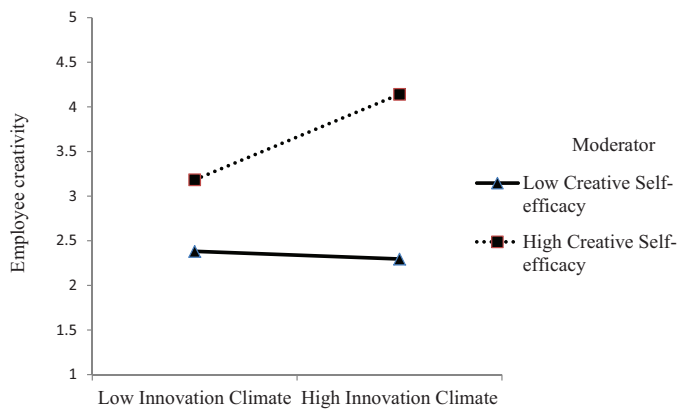


Fig. 3. Two-way interaction.

$p < 0.001$, Step 2) and after controlling for transformational leadership, innovation climate was positively related with employee creativity ($\gamma = 0.33$, $SE = 0.087$, $p < 0.001$, Step). Thus the indirect effect (0.20×0.33) of transformational leadership on employee creativity was 0.07 with 95% confidence limits between lower confidence level (LL) = 0.012 to upper confidence level (UL) = 0.17. Thus, the results supported the inference of mediation. The direct effect of transformational leadership on employee creativity became insignificant, indicating full mediation.

Hypothesis 4 proposed that creative self-efficacy moderates the effect of innovation climate on employee creativity in a way that the relationship is strengthened when creative self-efficacy is higher rather than lower. To test Hypothesis 4, an interaction term was included in the step 4 (see Table 6). The results revealed significant interaction term ($\gamma = 0.26$, $SE = 0.030$, $p < 0.001$). The results indicated that creative self-efficacy significantly moderates the relationship between innovation climate and employee creativity, providing support for Hypothesis 4. A simple slope analysis (Preacher et al., 2007) was performed to locate employee creativity in innovation climate within high and low creative self-efficacy. Fig. 3 showed the nature of the interaction, which was obtained by plotting the estimates plus and minus one standard deviation of the means of creative self-efficacy to represent high versus low creative self-efficacy on innovation climate. As anticipated, the results showed that when creative self-efficacy is low, innovation climate has less impact on employee creativity and when creative self-efficacy is high, the relationship is strengthened.

Further, to calculate the R^2 (R-Square) measures for Two-Level HLM, HLMRSQ SAS macro (Recchia, 2010; Poteat and Anderson, 2012) was used. This measure of effect size is analogous to the measure of explained variance (R^2 statistics), traditionally used in linear regression. In the final model, the R^2 value for level 1 is 0.70 and the R^2 value for level 2 is 0.78.

5. Discussion

The increasing importance of employee creativity in all types of business organizations has fostered researchers to search out the mechanisms that stimulate creativity among employees. There is a consistent gap in the literature about what constitute mediating and moderating effect on the process of predicting employee creativity through various antecedents. The present study delves into the process of promoting employee creativity through transformational leadership and innovation climate and the role of employee's creative self-efficacy in determining the strength of the relationship. The study empirically supports that an employee's perception about his/her leader's transformational way of leading,

supportive innovation climate and beliefs about his/her ability to perform creatively influence their creative performance.

In line with recent studies (Wang et al., 2014), it was revealed that transformational leaders promote creativity among their subordinate employees. Extending the findings of Gupta et al. (2012), this study found a positive relationship between transformational leadership and individual creativity. Consistent with the findings of Gumusluoglu and Ilsev (2009a), the findings of the present study provide empirical support for the notion that transformational leadership is more favorably embedded in collectivist cultures like India (Gumusluoglu and Ilsev, 2009a). Thus, while demonstrating the transformational leadership in a collective setting, leaders are able to provide what their subordinates always seek from them, i.e., support, assistance, attention and suggestion (Sinha, 2008).

Moreover, it has been established that followers, who share a personalized relationship with their supervisor, more likely to demonstrate obedience and deference (Howell and Shamir, 2005). Traditionally, in a collective setting such as India, subordinates prefer dependent personalized relationships with their supervisors (Sinha, 1984). While considering each subordinate as having different needs (individualized consideration), a transformational leader establishes a strong personalized relationship with each subordinate. Transformational leaders not only exercise the organizational authority just as a boss, but they also carry a benevolent source on which subordinates can rely for their personalized needs such as teaching coaching to perform creatively (Bass et al., 2003). Thus, the findings of the study extend that in India, where the leader-subordinate relationship is guided by deference and affection (Sinha and Sinha, 1990), transformational leaders can receive deference and affection from their subordinates which in turn help them to extract creative performance from their subordinates.

Further, the study found empirical support for cross level effect of group's innovation climate in determining an employee's creative behavior. Similar to the findings of Wang et al. (2013), the results empirically support our prediction that innovation climate of group positively relates to with employee creativity. Additionally, we found a significant mediating role of innovation climate between transformational leadership and employee creativity. Thus, the study reveals that transformational leaders can more effectively engage their subordinates in creative behavior if their subordinates perceive supportive climate for innovation from their organization. This affirms 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. In addition, the evidence regarding the cross level effect of group's innovation climate supports that the agreement within the group on appropriate behavioral patterns and shared perception of positive innovation climate put great pressure on members to maintain harmony (Dragoni, 2005) and strengthen the members' motivation to the instrumental support for individual's efforts for creative endeavors. Thus, the study also confirms that at the workplace, group membership has significant impact over individual attitude and behavior (Wang et al., 2013; Hon et al., 2013). Hence, the individual related variable could not be studied all alone without considering the group effects.

Since employee creativity is strengthened through high creative self-efficacy, our results revealed that an individual's perception about transformational leadership and a supportive innovation climate predicts a substantial improvement in employee creativity only when an individual's belief about his or her ability to deliver creative outcomes is higher rather than lower. This study reveals that an individual requires a strong sense of efficacy to persist creative endeavors. Extending the findings of Tierney and Farmer

(2011), the study results confirmed that employee creativity is easily influenced by self and social context related factors even in a collectivist culture.

Although recent studies have found a mediating effect of creative self-efficacy on employee creative performance (Wang et al., 2014; Zhou et al., 2012), yet previous studies on creativity have rarely tested the effects of creative self-efficacy (low and high score) on creativity. Hence, this study contributes by extending the existing theory of self-efficacy (Bandura, 1997) and creative self-efficacy (Tierney and Farmer, 2002) while establishing the significant moderating role of creative self-efficacy in predicting employee creativity.

The findings draw support about the functional dependency of creative behavior on creative self-efficacy. The specificity of the creative self-efficacy (Bandura, 1997) makes it very flexible due to which the degree of an individual's belief about his or her creative capability is easily affected by contextual factors like innovation climate. These factors may not directly linked with creative self-efficacy, but they may act via two way interaction (see Fig. 3). Thus, nonexistence of supportive innovation climate negatively affects the individual's belief about his or her creative capability even when he or she is capable enough. In this way, the findings of the study call for a viable debate about the potential moderating role of creative self-efficacy in determining the effect of different contextual factors in predicting individual creative behavior.

5.1. Implications

The present study has both theoretical and managerial implications. This study is first to investigate the interactive role of creative self-efficacy in predicting employee creativity through transformational leadership and innovation climate. In addition, this study has tried to contribute to the literature through integrating the theory of transformational leadership and organizations' innovation climate. More specifically, the study highlighted the significant implications of transformational leadership. 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 routine tasks. Through the organizations' rewards system, they facilitate promotion and recognition for creative performance and assure stability to their follower in case of any failure while working differently. Thus, it is extremely important for hotel managers to have a sound understanding about the theoretical and practical relationship that exist between transformational leadership and employee creativity. While adopting a transformational way of leading they can exploit creative ability of their employees productively to obtain innovative solutions for their routine problems.

The evidence regarding the moderating role of creative self-efficacy is practically important for at least two reasons. Firstly, organizational strategies for promoting employee creativity may not last if an employee has a weak belief about his/her creative self. Secondly, enhanced creative self-efficacy acts as a multiplier for different antecedents of employee creativity. In this regard, the present study has provided an appropriate strategy for managers who are interested in maximizing creativity in their subordinates' work, to simultaneously construct a supportive innovation climate and enhance the self-efficacy of their employees by providing them training and coaching on a regular basis.

The quality of service delivered by tourist hotels depends on customer-contact employees and the findings of the study bring forward significant suggestions to bring creative approaches in their services. While offering services in tourist hotels, highly interactive service transactions occur between customers and customer-contact employees. In this, the creativity of customer

contact employees plays a vital role in enhancing a customer's loyalty and satisfaction (Costa et al., 2004). Thus, managers need to understand that their transformational way of leading has significant implications in determining creative performance of customer contact employees. They need to adhere to an individualized approach for each subordinate and understand their needs and perceptions to facilitate appropriate resources and support for them. Hotel managers, while expressing confidence in their subordinates, can compel a vision for creative performance. They must provide regular coaching to their subordinates that will act as a catalyst to strengthen their skills and enable them to possess a creative approach toward their work.

It is noteworthy that the innovation climate of the tourist hotels has been ranked relatively low. Thus, it is equally important to build a fearless and trustworthy climate (Slatten et al., 2011). Thus, tourist hotels need to provide a secure and supportive climate to encourage their employees to act in non-conventional ways to gain customer value. Here, it is considerable that the finding of the study reveals that absence of creative self-efficacy may reduce the effects of transformational leadership and supportive innovation climate in predicting employee creativity. Thus, while managers may exhibit individualized consideration and provide intellectual stimulation, they must provide the necessary ingredients through training and development activities (Dhar, 2015) to sharpen their creative potential and belief of creative self to solve routine problems in creative ways.

5.2. Limitations and directions for future research

The present study has few limitations that must be highlighted. First, the study was survey based and cross-sectional in nature, making it difficult to draw a casual relationship between the different variables of the study. Thus, future studies may adopt a longitudinal approach to study the effect of change in supervisors' leadership style and innovation climate on employee creativity. Further, this study did not give much consideration to the various cultural aspects while testing the hypothesized model. Hence, future studies may draw deeper insights from comparative study between individualistic and collectivistic sample. Next, the study was conducted in the tourist hotel industry. In order to generalize the findings of the study, it needs to be replicated in other industries such as airline, resort and travel services. In addition, future studies might be conducted to understand other factors that might be responsible for motivating individuals to indulge in creative behavior. Apart from examining the causes that influence employee creatively, it would be more specific to study the causes and consequences of creative behavior in the context of the hospitality industry.

6. Conclusion

In conclusion, this study attempted to examine the role of transformational leadership in predicting creativity among customer contact employees of tourist hotels. Additionally, it studied the intervening role of innovation climate and creative self-efficacy. The findings provide directions for hotel managers to reform their policies and work environment in such a way that employees perceive support from their organizations and their immediate supervisors, in view of performing creatively. In this context, hotel managers need to design training programs and counseling sessions for their customer contact employees so that they are able to work creatively.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.ijhm.2015.07.002>.

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