Competitive Social Sciences Research Journal (CSSRJ), 2 (3), 1-16
ISSN(Print): 2708-9029, ISSN(Online): 2708-9037
www.cssrjournal.com

Impact of Inspirational leadership and team support for innovation on the team Innovative performance: A Multilevel Approach

***Shafaq Arif Chaudhry**
Assistant Professor, Lahore Business School, The University of Lahore, Pakistan.

Muhammad Shahid
Lahore Business School, The University of Lahore, Lahore 54000, Pakistan.

Muhammad Bilal
Lahore Business School, The University of Lahore, Lahore 54000, Pakistan.

*Email of the corresponding author: shafaq.arif@lbs.uol.edu.pk

ABSTRACT

*The purpose of the study is to examine the connection between team support for innovation (TSI) and the team's innovative performance (TIP). Employing a multilevel approach, the study also reveals the mediating influence of creative work involvement (CWI) of employees and the moderating impact of inspirational leadership (IL) in the anticipated model. **M**ultilevel, multisource, time lag predictive research design was applied in the study, and survey questionnaires were administered to 415 employees of 83 teams and their respective supervisors in Pakistani software companies to test the anticipated relationships. SPSS 22, AMOS and MPLUS version 7 were utilized for statistical analysis. The hypothesized mediation and moderation models in a multilevel design were fully supported. CWI of employees mediated the association between TSI and TIP. The moderating impact of inspirational leadership between TSI and CWI on employee was supported. Overall, the research demonstrates that TSI generates a cultivating climate for TIP by motivating CWI of employees. Results of the study can be exploited by managers for stimulating TIP in the organization, which has been recognized vital to organizations' success and growth. The study contributes to team supportive climate for innovation and team innovative performance literatures and provides understandings into how the managers can utilized a team supportive climate to maximize TIP. This is the prime study which analyze the influence of team on individual and how individual employee contribute to the team performance.*

Keywords: Pakistan, Team support for innovation (TSI), Creative work involvement (CWI), Inspirational leadership (IL), team innovative performance (TIP), social interdependence theory

To cite this article: Chaudhry, S.A, Shahid, M. & Bilal, M. (2021). Impact of Inspirational leadership and team support for innovation on the team Innovative performance: A Multilevel Approach. Competitive Social Sciences Research Journal (CSSRJ), 2 (3), 1-16.

INTRODUCTION

In the contemporary era, to sustain competitive advantage in the market, firms have to nurture innovation (Anderson et al., 2014; Jiang et al., 2019; van Knippenberg, 2017). The majority of the innovation-related work in firms is achieved by teams, specifically in knowledge-intensive businesses (Anderson et al., 2014; Han et al., 2021). The information technology-related sector signifies the segment where more innovation is required among these businesses. Accordingly, we specify a need to identify the elements that nurture innovation in teams related to the IT sector. Our evaluation emphasis on team supportive climate for innovation as it has been observed as a critical element for innovation (Anderson et al., 2014).

However, a recent evaluation proposes that additional research on the influence of team interdependence on innovation at the team level is needed (Liu et al., 2017). Most of the innovation-related literature have an emphasis on a single team process instead of focusing on a multilevel approach (Eisenbeiss et al., 2008; Jiang and Chen, 2018; Jiang et al., 2019; Tang et al., 2020). However, these empirical works provided numerous valuable understandings (Wallace and Chen, 2006); we believe that a multilevel research approach focusing on both team and individuals simultaneous in the same research would be more valuable.

Our rationalization is founded on team interdependence in the sense of team support for innovation and their individual effectiveness in the sense of creative work involvement that suggests that teams consist of individuals who work in an interdependence manner to achieve the organizational objective in the form of team innovative performance in the context of social interdependence theory. Furthermore, team innovation involves multiple team processes that are responsible for converting individual creative behavior into team innovative performance (West and Anderson, 1996). Consequently, we evaluated an individual-level variable as a potential mediator, i.e., creative work involvement (Carmeli and Schaubroeck, 2007), which segregates emergent state and multiple team processes at the individual level and then integrates into team innovative performance.

Previous studies have exhibited that innovation is an essential element for organizational survival, competitive advantage, and future success (Ali et al., 2020; Hughes et al., 2018; Jiang et al., 2019; Van der Voet and Steijn, 2021). Growing competition and the coalition have aggregated the need for innovation, and organizational teams are mainly responsible for innovation (Liu et al., 2017). The basic premise behind this strategy is the faith that the convergence of diverse knowledge, skills, and capabilities that the individual team members possess facilitates innovation from idea generation to idea implementation as innovation needs the integration of numerous individuals to work in an integrated pattern. For example, if the innovation induced by the work team is efficacious and practical, it is essential to introduce it into other work units to induct new and revolutionary practices for organization success and achievement (Le Blanc et al., 2021). Therefore, in the contemporary era, organizations require to develop innovative teams to survive and compete. Therefore, seeking and identifying antecedents of team innovation is essential not only from the theoretical point of view but also from a practical perspective (Le Blanc et al., 2020).

However, researchers initially focused on organizational level antecedents of innovation (Damanpour, 1991). From the early 1990s onward, researchers focused on team-level predictors of innovation. A meta-analysis result predicted that team processes and characteristics such as

team internal communication, task orientation, external communication, leadership support, and team support for innovation directly affect team innovation (Hülsheger et al., 2009). Team support for innovation is an essential component for innovation as it encourages team members to be involved in creativity. On the grounding of their findings, they suggested that it is essential to identify the mechanism through which team support for innovation induces team innovative performance.

The crux of a team is the interdependence among individuals (Kurt Lewin); due to this, the team becomes dynamic as the change in one individual or team, changing the situation of other members or team. The interdependence among the team members can be achieved through shared goals. When team individuals perceive their mutual goals, a scenario of pressure develops that encourages them to put effort to achieve the goal. Deutsch (1949, 1962) argued that interdependence may be positive or negative, and it depends on the correlation among team members for goal achievement. Social interdependence examines the interaction pattern among team members and consequently generates three psychological activities.

Deutsch (1949) stated that social interdependence leads to three psychological processes; inducibility, cathexis, and substitutability. Inducibility is the broad-mindedness to being affected and to affecting others. Cathexis is investing psychological effort for others instead of him/herself like colleagues, family, and friends. Lastly, substitutability is the extent to which the behavior of one team member substitutes for the behavior of other team members. Deutsch (1949) further assumed that positive interdependence encourages promotive interaction; on the contrary, negative interdependence leads to antagonistic or oppositional interaction. Promotive interaction stimulates team members to accelerate other teammates' efforts to accomplish tasks in order to achieve team objectives. While oppositional interaction obstructs and discourages each other's efforts to accomplish tasks in order to achieve their objectives. Accordingly, positive or negative promotive interaction developed among team members.

HYPOTHESIS DEVELOPMENT

Mediating role of CWI between TSI and TIP

Support for innovation refers to the *"expectation, approval and practical support of attempts to introduce new and improved ways of doing things in the work environment"* (West, 1990, p. 38). West (1990) argued that team support for innovation levels is different in teams based on the degree to which how much force is applied from the management to express and endorsed to implement it. The support for innovation is expressed by word of mouth, policy statements, and personnel documents. To support innovation, just expressing support is not sufficient; support in the form of executing behavior is also needed.

Employees in a team supportive environment are always tried to seek new and innovative methods to solve problems provide real support to execute novel ideas in an action-oriented way (Anderson & West, 1998).

Creative work involvement has two intrinsic features: potentially risky (Kark and Carmeli, 2009) and discretionary (Volmer et al., 2012). Consequently, there are two essential perceptions relating to the decision of whether to involve in creative behavior (Kark and Carmeli, 2009). The first one

is safe, in which the individual believes that the creative behavior will not be punished (Hennessey, 2015), and the individual believes that creativity is valued in the team and organization (Carmeli and Schaubroeck, 2007). In this connection, by focusing on availability, openness, and accessibility in their linkages with team members, TSI might influence both of these prime beliefs in a way that will encourage a superior level of creative work involvement.

Team supportive climate for innovation help team members to be open to share their suggestions and ideas and stimulate them to communicate their views are likely to establish a shielded atmosphere that can guarantee team members that penalties like culpability or punishment would not be the consequences of their challenging behavior (Somech and Drach-Zahavy, 2013); therefore, it can reduce the potential risks and costs of creative behaviors of employees and encourage them to offer ideas and opinions. Correspondingly, when TSI is accessible and available to employees, the unease and uncertainty of employees may reduce, therefore letting them shed their camouflages, demonstrating their opinion and thoughts more happily, and sharing information willingly (Bos-Nehles and Veenendaal, 2019). More significantly, by adopting the norm of openness, team support for innovation may proliferate this norm among the team members; consequently, individuals are not only involved in creativity but also encourage other colleagues to express their opinions and ideas (Carmeli and Schaubroeck, 2007). Consequently, team support for innovation will likely develop a robust creativity-supportive environment that will encourage individual employee involvement in creativity (Shin, 2015).

Creative work involvement may lead to enhanced creation of novel ideas through the information and knowledge sharing, and integration of that information and knowledge lead to promote team innovative performance. Creative work involvement can play an essential role in encouraging innovative performance in teams. Furthermore, some researchers have claimed that innovation generally initiates with the reaction to apparent problems, suboptimal processes, or insufficiencies (Zhou and George, 2003). Moreover, team innovative performance is an unusual act that needs modifying or rejecting earlier recognized ideas, rationalizing “outside the box,” and expanding beyond conventional and common norms (Eisenbeiss et al., 2008; Jiang et al., 2019). In this connection, creative work involvement may establish a pivotal force for team by proactively challenging the current situation, enquiring the deep-rooted presumptions, and calling for changes in “the way things are” (Ohly and Fritz, 2007) innovative performance.

Hypothesis 1: creative work involvement will mediate the relationship between team support for innovative and team innovative performance.

The moderating role of inspirational leadership between TSI and CWI

Inspirational leadership is one of the dimensions of transformational leadership that may enhance employee willingness and commitment to sacrifice their personal objective; they encourage prioritized team shared goals, collective interests, the value of others preferences and positions (Li et al., 2016). Consequently, team members are ready to share information and overtly debate and argue issues, enhance the creation of novel ideas, and increase the likelihood of integrating and valuing opposing views, which ultimately increase employees' creative and innovative behavior (Van Knippenberg and Van Knippenberg, 2005). Numerous studies have proposed that the prominent feature of transformational leadership is self- scarifying behavior. It states a leadership type that abandons or postpones personal privileges and interests for the team common interest

(Choi and Yoon, 2005, p. 52). However, prior studies have examined the positive connection between transformational leadership and employee behavior (Tian et al., 2020), very scant knowledge is available relating the effect of inspirational leadership on employee creative involvement.

Inspiration leadership through inspirational motivation articulate a clear vision and assist as a role model to invigorate the teams and have the strength to motivate and lead the teams to achieve goals beyond prospects (Bass and Stogdill, 1990). By highlighting the significance of working in cooperative manners, inspirational leaders incline to improve team members' consciousness of work interdependence and the importance of the shared goals (Shamir, 1990). Enthusiastic and thrilled by their leaders' clear vision, the team members likely emphasize their leader's shared goals. The prime objective of software teams is to generate better and new services and products, and their superordinate key responsibility is to lead individual employees to be involved in creativity. Consequently, team support for innovation and inspirational motivation of inspirational leaders must increase their team identification, which will improve the creative involvement of employees to achieve organizational objectives.

Hypothesis 2: Inspirational moderates the positive relationship between team support for innovation and creative work involvement, such that this positive relationship is stronger with the higher perception of inspirational leadership than with a lower perception of inspirational leadership.

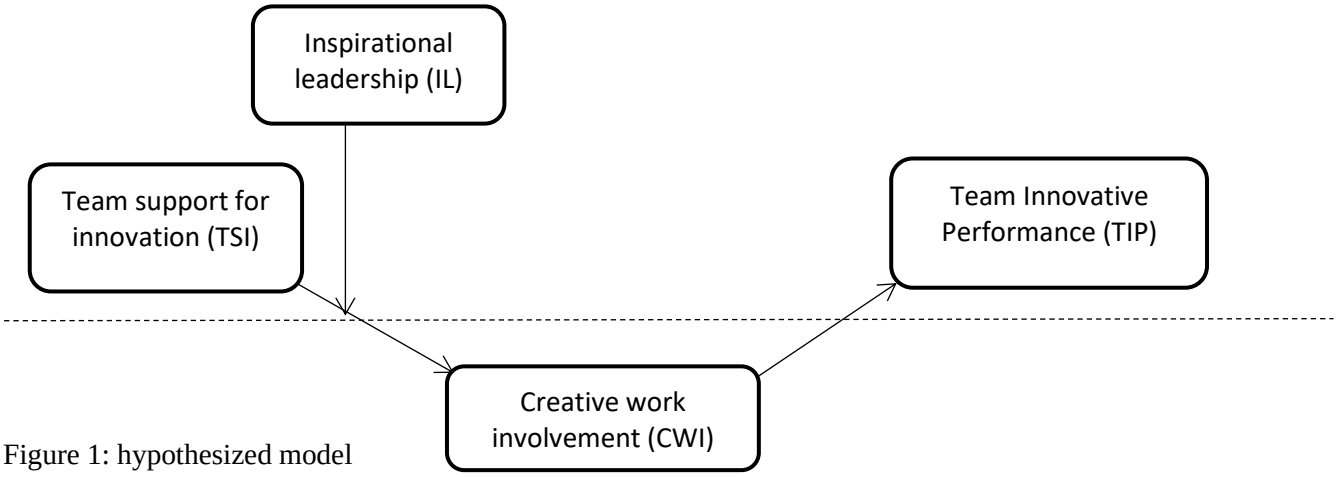

Figure 1: hypothesized model

METHODOLOGY

Sampling and data collection

In the present study, a survey approach is applied to collect data from software companies in Pakistan. Software engineers filled the survey questionnaires except for team innovative performance. To remain free from common method biased data related to team innovative

performance were gathered from the team supervisor. There are three particular motives to collect data from software companies: first, there is a rapid and swift modification in software technology, so employees must be creative and support innovation to meet these requirements. Second, software engineers constantly exchange ideas through constant interaction and get critical evaluations from their colleagues and clients. Third, software companies need creativity to remain competitive, and creativity is closely related to individual motives and ideas. Supportive teams can encourage individuals to involve in creativity. Supportive team climate encourages team members to share ideas, knowledge, and skills which enhance the engagement of individual employees in creativity.

We randomly targeted 34 software companies and communicated with their human resource department via email to brief our research objectives and appeal to their volunteer contribution in the research survey. To motivate their involvement, we guarantee them that the respondent's secrecy and privacy will remain intact and promise to provide a summary of survey findings. Out of these 34 organizations, 23 software companies confirm their readiness to participate in survey research. To seek information about the number of teams and members in each team, we requested the HR manager of each firm to provide us with details. Survey questionnaires with the covering letters were dispatched to the human resource manager with the request to circulate these to software engineers to get their feedback, and then duly filled questionnaires will be returned to us through the courier.

A time lag predictive research approach was applied to fill the survey questionnaire. The survey questionnaires data were collected in three waves. First, Podsakoff et al. (2012) recommended that to reduce common method biased, predictor and outcome variables be measured separately, and intervening variable data be measured between predictor and criterion variables. Therefore, three weeks gap between each survey was appropriate as the same was used in the previous studies (Kim and Beehr, 2017). Furthermore, to minimize common method biased effect, survey responses were not collected from the same source, i.e., an outcome like team innovative performance data were collected from team supervisor (Podsakoff et al., 2012) whereas independent variable, mediating, and moderating variable data were collected from employees.

Initially, 785 survey questionnaires were distributed to 115 teams to get data related to team support for innovation and inspirational leadership. In time 1, we received 617 responses from 103 teams. After fifteen days, questionnaires related to creative work involvement were distributed to the same respondents who recorded their responses in time 1. In the second wave, we received 535 responses from 91 teams. Similarly, fifteen days after the supervisor of same respondents who filled both times one and time two questionnaires were requested to fill questionnaires related to team innovative performance. As a result, we received 453 responses from the team leaders regarding their subordinate involvement in the innovative performance. Out of these 453 responses, 38 questionnaires were discarded due to incomplete responses. Consequently, 415 survey questionnaires of 83 teams were considered for further analysis.

Aggregation

We aggregate employee feedback into their relative teams to compute team-level feedback. Interrater agreement index (rwg(j)) is calculated to justify the aggregation and to evaluate either team individuals' feedback is consistent to calculate team level feedback (James et al., 1984).

Interclass correlation coefficients are also computed. The findings of aggregated parameters (i.e., ICC(1) and ICC(2) and rwg(j)) values are more than the acceptable range (Biemann et al., 2012). Consequently, measuring the team-level constructs is statistically suitable.

Measures

Team support for innovation Team support for innovation (T1) was assessed by means of a 4-item scale (e.g., "The team took the time needed to develop new idea") with four feedback choices (1, strongly disagree; 5, strongly agree). The scale was picked from Nisula and Kianto (2016), an adaptation of Anderson and West's (1998) team support for innovation questionnaire. The Cronbach's alpha value was .88.

Creative work involvement Creative work involvement (T 2) was rated by employees on 9-items taken from Tierney et al. (1999) creative work involvement scale (i.e., "I demonstrated originality at my work" with 5-response options (1, strongly disagree 5, strongly agree). The Cronbach's alpha value was .93.

Inspirational leadership: Inspirational leadership (T1) was measured with a 3-item scale (e.g., "Says positive things about the work unit") with five response choices (1, very rarely; 5, very frequently). The scale was taken from Rafferty and Griffin (2004); they adapted Podsakoff et al. (1990) scale to measure inspirational leadership. The Cronbach's alpha value was .75.

Team Innovative performance: Team innovative performance (T3) was assessed by mean of a 4-item scale (e.g., "This is an innovative team") rated by the team leader, with four feedback choices (1, strongly disagree; 5, strongly agree) picked from Dreu, (2002), adaptation of Anderson and West (1998), The Cronbach's alpha value was .82.

Control variables: Team tenure and gender were considered the control variables in the present research.

Path analysis and typical multilevel regression analysis do not fulfill the requirements to investigate the proposed hypothesized model (Kyriakides and Creemers, 2012). Therefore, Muthen and Muthen's (2010) statistical software package Mplus was applied to conduct multilevel structural equation modeling (MSEM) to evaluate the effect. With robust maximum likelihood (MLR), Muthén and Muthén, (2010) version 7 of Mplus was utilized for estimation. The current model was donated to a 2-1-2 model because the mediator is at level 1 and independent and dependent variables are at level 2. We focused on different fits of the model to examine the model fit: the comparative fit index (CFI), standardized root mean square residual (SRMR), chi-square, the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA). The acceptable value range of SRMR and RMSEA falls within the range of 0.05 and 0.10. CFI, TLI value above .90 and chi-square/df less than 3.00 considered acceptable (Browne and Cudeck, 1992).

The assumed 4-factor model fit rationally well (Hair et al., 1998; $\chi 2 = 465.62$, df = 164, SRMR = 0.05, RMSEA = 0.07, TLI = 0.91, CFI = 0.93) and has better model fitness than alternative models. Hypothesized and alternative models result to prove the distinctiveness of the study variables shown in table 1. We applied the Harman single-factor test to detect common method variance (CMV). By including four study constructs without rotation, we performed factor analysis. The

findings revealed that the single factor model is not a significant fit as it explained 44.21% of the variance, suggesting CMV threat does not exist in this study (Podsakoff et al., 2012). Discriminant validity and CMV test are sufficient to measure common method bias (Williams & McGonagle's, 2016). We load all variables on the single factor in contrast to confirmatory factor analysis models. The results revealed that the single factor model (table 1, model 6) fit indices are not up to mark ($\chi 2 = 1578.71$, df = 170, SRMR = 0.14, RMSEA = 0.14, TLI = 0.61, CFI = 0.65), which mean that common method bias was not the threat. Furthermore, the findings supported the discriminant validity of the measures.

Table 1: Confirmatory factor analysis

Model	X^2	df	ΔX^2	SRMR	RMSEA	TLI	CFI
1. 4 factor Model	465.62	164		0.05	0.07	0.91	0.93
2. 3 factor Model	794.73	167	329.11**	0.07	0.09	0.82	0.85
3. 3 factor Model	774.43	167	308.81**	0.07	0.09	0.83	0.85
4. 3 factor Model	863.46	167	397.84**	0.10	0.10	0.80	0.83
5. 2 factor Model	1087.00	169	621.38**	0.09	0.11	0.74	0.77
6. Single factor Model	1578.71	170	1113.09**	0.13	0.14	0.61	0.65

Note: $\chi 2$ = chi-square; df = degree of freedom; $\Delta\chi 2$ = change in chi-square (assessed and contrast to Model 1); SRMR = Standardized Root Mean Square Residual; RMSEA = Root mean square error of approximation; TLI = Tucker-Lewis index; CFI = Comparative fit index. Number of individual employees = 415. Number of teams = 83 (each team consists of 5 members). In measurement model 2, TIP and IL were merged, in model 3, TSI and IL were merged, in model 4, TSI and TIP were merged, in model 5, TSI, TIP and IL were merged.

Aggregation Statistics

To measure the suitability of aggregating employees and leaders, individual responses at the team level, we first calculated Rwg(j) (e.g., James et al., 1984). We considered the uniform distribution the null distribution as we did not anticipate any routine feedback bias influencing respondent feedback. According to this premise, the uniform distribution is suitable for null distribution (James et al., 1984). Additionally, uniform distribution is "the most natural candidate to represent non-agreement" (Cohen et al., 2009, p. 149). Finally, we computed inter-rater agreement and intraclass correlations to provide logic for aggregating team support for innovation, inspirational leadership, and team innovative performance (Muthén, 1994; Preacher et al., 2011). Team support for innovation, inspirational leadership, and team innovative performance Rwg(j) values are .77, .79, and .75, respectively shown in table 2. To find interclass correlation coefficients (ICC) of team-level variables, we performed ANOVAs. ICC(1) shows either a team level influence on the construct of interest and gives an estimation of reliability among two distinct raters from the identical team, and ICC(2) gives an estimation of the consistency of the mean at the team level (Bliese, 2000). The values of ANOVA demonstrate that team support for innovation ($F(419, 1257) = 8.26$, $p < .001$), inspirational leadership ($F(419, 838) = 4.02$, $p < .001$) and team innovative performance ($F(419, 1257) = 5.63$, $p < .001$) varied significantly across teams, supporting the rationality of the aggregated scales (Chan, 1998). The interclass correlations values of team support for innovation (ICC1 = .73, ICC2 = .80, rwg(j) = .77), inspirational leadership (ICC1 = .75, ICC2 = .82, rwg(j) = .79), and team innovative performance (ICC1 = .71, ICC2 = .79, rwg(j) = .75) are in acceptable range i.e., > .7 (James et al., 1984; Kim et al., 2017). Therefore,

aggregation of team-level constructs was supported and have congruous with the prevailing literature (kim et al., 2017).

Table 2: interclass correlation, inter-rater agreement and ANOVA

Variables	Mean r_{wg}	ICC(1)	ICC(2)	F ratio	P Value
Team support for innovation	0.77	0.73	0.8	8.26	0.00
Inspirational leadership	0.79	0.75	0.82	4.02	0.00
Team innovative performance	0.75	0.71	0.79	5.63	0.00

Table 3 demonstrates the means, standard deviations, and correlations for all variables of the study. The correlation analysis results showed that team support for innovation at T1 was significantly associated to creative work involvement at T2 ($r = .31$, $p < .01$) and team innovative performance at T3 ($r = .45$, $p < .01$). Furthermore, creative work involvement at T2 was significantly associated with team innovative performance at T3 ($r = .37$, $p < .01$). These findings now provide initial support for H1.

Table 3: descriptive statistics: mean, standard deviation, reliabilities and inter-correlation

Variables	Mean	SD	1	2	3	4	5	6	7
Team level									
1. Team support for innovation	4.32	0.46	**.88**						
2. Inspirational leadership	4.04	0.39	.52**	**.75**					
3. Team innovative performance	4.08	0.43	.45**	.40**	**.82**				
4.Team tenure	2.43	1.23	.01	.05	.06				
Individual level									
5. Creative work involvement	3.61	0.95	.31**	.41**	.37**	.07	**.93**		
6. Gender	0.71	0.45	-.05	.02	.04	.04	.03		
7. Age	2.44	1.07	.07	.14**	.21**	.47**	.09	.26**	1

Multi-level SEM analysis for the hypothesized model

The multi-level SEM analysis results proved that structural model fit indices were acceptable ($\chi 2 = 550.77$, $df = 191$, $p < .00$; SRMR = 0.08; TLI = 0.90; CFI = 0.92; RMSEA = 0.07), hypothesized paths were statistically significant and demonstrated the anticipated direction of relationship (Table 4 and Figure 2). The association between the team support for innovation and creative work involvement was positive as anticipated and statistically significant ($a = 0.67$, ULCI = .61 LLCI = 1.31 $p < .001$). Furthermore, creative work involvement was positively associated to team innovative performance ($b = 0.71$, ULCI = .51 LLCI = .90 $p < .001$). These results provide initial support to hypothesis 1.

Table 4: Multi-level SEM analysis for the hypothesized model

Relationship	Estimate	SE	95% CI	Remarks
TSI ·> CWI	0.67**	0.09	(.61, 1.31)	

TSI ·> CWI ·> TIP	0.66**	0.20	(.10, .73)	Supported H1
TSI ·> TIP	0.05	0.20	(-.31, .41)	
TSI*IL ·> CWI	0.38*	0.12	(.03, .72)	Supported H2

Hypothesis 1 stated that individual creative work involvement would mediate the link between team support for innovation and team innovative performance. As stated earlier, the association between the team support for innovation and creative work involvement was statistically significant, and creative work involvement was associated with team innovative performance. Moreover, statistical software Mplus was used to evaluate the mediating effect of individual creative work involvement between team support for innovation and team innovative performance. The statistical findings (estimate = 0.66, ULCI = .10 LLCI = .73 $p < .01$) proved that CWI mediates the relationship between TSI and TIP shown in table 4.

Hypothesis 2 stated that inspirational leadership moderates the relationship between TSI and CWI, such that the positive relationship will be further strengthened with the high perception of inspirational leadership. The interactional effect of inspirational leadership on creative work involvement is significant in that inspirational leadership further strengthens the relationship between team support for innovation and creative work involvement. The statistical findings (estimate = 0.38, ULCI = .03 LLCI = .72 $p < .05$) proved that inspirational leadership moderate the relationship between TSI and CWI as shown in table 4.

DISCUSSION

This research investigated the influence of TSI on TIP in a multilevel research design. We observed support for both hypotheses. First, TSI stimulates creative work involvement, which in turn improves team innovative performance. Second inspirational leadership helps to strengthen the positive association between TSI and CWI. However, we did not observe a direct association between TSI and TIP. The findings prove that TSI demonstrates a beneficial effect at both individual (CWI) and team level (TIP). This research elucidates that inspirational leadership strengthens the relationship between TSI and CWI. Furthermore, we presented the theoretical implications of the study and proposed practical implications to the team leaders.

THEORETICAL IMPLICATIONS

This research adds to the team's innovative performance literature in two ways. Firstly, this research improves our understanding regarding the predictors of team innovative performance by displaying the distinctiveness of TSI in encouraging team innovative performance. However, both the TSI and TIP literature have recognized the worth of comprehending the association between team support and team innovative performance. Second, by disclosing the intervening role of CWI in multilevel research design, this research undoubtedly emphasized the significance of team processes for amplifying how TSI influences team innovative performance. Although the present literature has identified individual-level processes that can offer worthwhile models for comprehending team innovative performance, the precise processes that can be applied to nurture team innovative performance are mainly overlooked (Jiang and Chen, 2018). Consequently, by integrating and theorizing CWI as an underlying multilevel mechanism that connects TSI and TIP,

this research further strengthens the arguments of (Burningham and West, 1995) that individual process construct demonstrates generalizable and essential association with team innovation.

The current research also fabricates numerous vital theoretical aids to the TSI literature. This research encompasses the present consideration of the outcomes of team support for innovation at the individual level, CWI, and TIP at the team level. This is an exclusive addition to the TSI literature because the concentration in the significant role that TSI plays in firms has extended in current decades due to the progressive disparity in the workforce subsequent from the proliferation of monetary activities, almost all previous studies on team support for innovation have been emphasized on team or organizational level outcomes (Park et al., 2020); before to this study, the influence of team support for innovation on individual-level upshots had not been investigated. Although evidence proved that team support for innovation is undoubtedly uncourageous in stimulating individual creative work involvement and team innovative performance, this research offers additional support for the worth of team support for innovation. It extends our comprehension of the vital benefits of team support for innovation in team settings.

PRACTICAL IMPLICATION

Along with theoretical contributions, the results of this research offer some significant understandings for practice.

The results of this research propose that TSI is effective in encouraging CWI and, consequently, stimulating TIP. This result is motivating and has significant practical implications for team leaders to draw more successful management involvements to nurture CWI and TIP in Pakistan. Considering the potential risk and costs of creativity, individuals are more likely to avoid creativity and are generally unwilling to involve in creativity (Berg et al., 2017). Furthermore, conventional cultural ethics in the Pakistani society, like robust uncertainty avoidance, and high-power distance (Yuan & Zhou, 2015), were also harmful to creativity (Gu et al., 2018). Consequently, inspiring Pakistani individuals to involve in creativity is a great challenge for firms working in Pakistan. Our results regarding the value of team support for innovation in boosting employees' creative work involvement among Pakistani employees, which finally stimulate team innovative performance, is therefore exclusively worthwhile for practice. Organizations should focus and stimulate team support for innovation among teams through interaction and promotion programs to encourage high creative work involvement and innovative performance in Pakistani teams.

LIMITATIONS AND FUTURE DIRECTIONS

Despite practical and theoretical implications, this research is exposed to some limitations that must be focused on in upcoming research. First, the sample size was comparatively adequate to some extent, that is, 83 team; in upcoming researches, the sample size should be increased as a small sample size decrease the potential to monitor statistically significant influence and enhance sampling error. Consequently, future studies that extend and replicate present results applying more representative and larger samples would be precisely needed. We further motivate future researchers to examine the study by applying diverse methodologies like qualitative and experimental research to investigate the team interdependence processes.

Second, the self-reported data in survey-based studies may have the biasness of social desirability and may increase the chances of common method bias. An encouraging sign of our study is that we gather data from diverse sources, a suggestion by researchers to reduce the influences of social

desirability (Podsakoff et al., 2012). Furthermore, we also used a time lag research design to reduce common method bias. We follow the guidelines of researchers Podsakoff et al. (2012), who suggest that independent and dependent variables should be assessed separately. Additionally, a longitudinal research design is needed in the future study in which research collect from different sources. Furthermore, the concept of TSI was established in the cultures of developed countries; hence, it may not be suitable for focusing current forms of support in the Pakistani culture. Therefore, it is essential to comprehensively investigate the exclusive nature of TSI in the Pakistani context.

Third, to specify the clear understanding of the multifaceted nature of team process (Thayer et al., 2018), the preference of a particular individual process construct (CWI) does not completely capture the possible intricacy of the association between team support for innovative, individual processes and its out at team level. Team processes like team entrepreneurial orientation could be value-generating to draw a comprehensive picture of how team support for innovation influences team innovative performance. Another motivating approach for anticipated research is to examine how diverse team processes contradict or complement one another in carrying the efficiency of TSI.

REFERENCES

Ali, A., Bahadur, W., Wang, N., Luqman, A., and Khan, A. N. (2020). Improving team innovation performance: role of social media and team knowledge management capabilities. *Technology in Society*, Vol. 61, pp. 1-12.

Anderson, N., Potočnik, K., and Zhou, J. (2014). Innovation and creativity in organizations a state-of-the-science review, prospective commentary, and guiding framework. Journal of Management, Vol. 40 No. 5, pp. 1297-1333.

Anderson, N. R., and West, M. A. (1998). Measuring climate for work group innovation: development and validation of the team climate inventory. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, *19*(3), 235-258.

Bass, B. M., and Stogdill, R. M. (1990). *Bass & Stogdill's handbook of leadership: Theory, research, and managerial applications*. Simon and Schuster.

Berg, S. T. S., Grimstad, A., Škerlavaj, M., and Černe, M. (2017). Social and economic leader–member exchange and employee creative behavior: The role of employee willingness to take risks and emotional carrying capacity. *European Management Journal*, Vol. 35 No. 5, pp. 676-687.

Biemann, T., Cole, M. S., and Voelpel, S. (2012). Within-group agreement: On the use (and misuse) of rWG and rWG (J) in leadership research and some best practice guidelines. *The Leadership Quarterly*, Vol. 23 No. 1, pp. 66-80.

Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis.

Bos-Nehles, A. C., & Veenendaal, A. A. (2019). Perceptions of HR practices and innovative work behavior: the moderating effect of an innovative climate. *The International Journal of Human Resource Management*, Vol. 30 No. 18, pp. 2661-2683.

Browne, M. W., and Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological methods & research*, *21*(2), 230-258.

Carmeli, A., Reiter-Palmon, R., and Ziv, E. (2010). Inclusive leadership and employee involvement in creative tasks in the workplace: The mediating role of psychological safety. *Creativity Research Journal*, Vol. 22 No. 3, pp. 250-260.

Carmeli, A., and Schaubroeck, J. (2007). The influence of leaders' and other referents' normative expectations on individual involvement in creative work. *The Leadership Quarterly*, Vol. 18 No. 1, pp. 35-48.

Choi, Y., and Yoon, J. (2005). Efects of leaders' self-sacrifcial behaviour and competency on followers' attribution of charismatic leadership among Americans and Koreans. Current Research in Social Psychology, Vol. 11, pp. 51–69.

Cohen, A., Doveh, E., and Nahum-Shani, I. (2009). Testing agreement for multi-item scales with the indices rWG (J) and AD m (J). *Organizational Research Methods*, Vol. 12 No. 1, pp. 148-164.

Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of management journal*, Vol. 34 No. 3, pp. 555-590.

Deutsch, M. (1949). A theory of cooperation and competition. *Human Relations*, Vol. *2*, pp. 129–152.

Deutsch, M. (1962). Cooperation and trust: Some theoretical notes.

Dreu, C. K. D. (2002). Team innovation and team effectiveness: The importance of minority dissent and reflexivity. *European Journal of Work and Organizational Psychology*, Vol. 11 No. 3, pp. 285-298.

Eisenbeiss, S. A., Van Knippenberg, D., and Boerner, S. (2008). Transformational leadership and team innovation: integrating team climate principles. *Journal of applied psychology*, Vol. 93 No. 6, pp. 1438-1446.

Gu, J., Wang, G., Liu, H., Song, D., and He, C. (2018). Linking authoritarian leadership to employee creativity: The influences of leader–member exchange, team identification and power distance. *Chinese Management Studies*.

Hair Jr JF, Anderson RE, Tatham RL, and Black WC (1998). Multivariate data analysis. New Jersey: Prentice-Hall.

Han, Z., Ren, H., Yang, S., and Han, Y. (2021). Human Resource Practice Management for Knowledge Intensive Team: IMPACT on Team Innovation Performance and Substitution Effect of Empowerment Leadership. *Sustainability*, Vol. *13* No. 9, pp. 1-16.

Hennessey, B. A. (2015). Creative behavior, motivation, environment and culture: The building of a systems model. *The Journal of Creative Behavior*, Vol. *49* No. *3*, pp. 194-210.

Hughes, D. J., Lee, A., Tian, A. W., Newman, A., and Legood, A. (2018). Leadership, creativity, and innovation: A critical review and practical recommendations. *The Leadership Quarterly*, Vol. 29 No. 5, pp. 549-569.

Hülsheger, U. R., Anderson, N., and Salgado, J. F. (2009). Team-level predictors of innovation at work: a comprehensive meta-analysis spanning three decades of research. *Journal of Applied psychology*, Vol. 94 No. 5, pp. 1128.

James, L. R., Demaree, R. G., and Wolf, G. (1984). Estimating within group interrater reliability with and without response bias. Journal of Applied Psychology, Vol. 69, pp. 85–98.

Jiang, Y., and Chen, C. C. (2018). Integrating knowledge activities for team innovation: Effects of transformational leadership. *Journal of Management*, Vol. 44 No. 5, pp. 1819-1847.

Jiang, W., Wang, L., Chu, Z., and Zheng, C. (2019). Does leader turnover intention hinder team innovation performance? The roles of leader self-sacrificial behavior and empathic concern. *Journal of Business Research*, Vol. *104*, pp. 261-270.

Kark, R., and Carmeli, A. (2009). Alive and creating: The mediating role of vitality and aliveness in the relationship between psychological safety and creative work involvement. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, Vol. 30 No. 6, pp. 785-804.

Kim, A., Kim, Y., Han, K., Jackson, S. E., and Ployhart, R. E. (2017). Multilevel influences on voluntary workplace green behavior: Individual differences, leader behavior, and coworker advocacy. *Journal of Management*, Vol. 43 No. 5, pp. 1335-1358.

Kyriakides, L., and Creemers, B. P. (2012). School policy on teaching and school learning environment: direct and indirect effects upon student outcome measures. *Educational Research and Evaluation*, Vol. 18 No. 5, pp. 403-424.

Le Blanc, P. M., González-Romá, V., and Wang, H. (2021). Charismatic leadership and work team innovative behavior: The role of team task interdependence and team potency. *Journal of Business and Psychology*, Vol. 36 No. 2, pp. 333-346.

Li, V., Mitchell, R., and Boyle, B. (2016). The divergent effects of transformational leadership on individual and team innovation. *Group & Organization Management*, Vol. 41 No. 1, pp. 66-97.

Liu, W., Mao, J., and Chen, X. (2017). Leader humility and team innovation: investigating the substituting role of task interdependence and the mediating role of team voice climate. *Frontiers in Psychology*, Vol. *8*, pp. 1115-1126.

Muthén, B. O. (1994). Multilevel covariance structure analysis. *Sociological methods & research*, Vol. 22 No. 3, pp. 376-398.

Muthén, L. K., and Muthén, B. O. (2010). Growth modeling with latent variable using Mplus: Advanced growth models, survival analysis and missing data. *Mplus short courses*.

Nisula, A. M., and Kianto, A. (2016). The role of knowledge management practices in supporting employee capacity for improvisation. *The International Journal of Human Resource Management*, Vol. 27 No. 1*7*, pp. 1920-1937.

Ohly, S., and Fritz, C. (2007). Challenging the status quo: What motivates proactive behaviour?. *Journal of Occupational and Organizational Psychology*, Vol. 80 No. 4, pp. 623-629.

Park, Y., Lim, D. H., Kim, W., and Kang, H. (2020). Organizational support and adaptive performance: The revolving structural relationships between job crafting, work engagement, and adaptive performance. *Sustainability*, Vol. 12 No. *12*, pp. 4872.

Podsakoff, P. M., MacKenzie, S. B., and Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual review of psychology*, Vol. 63, pp. 539-569.

Preacher, K. J., Zhang, Z., and Zyphur, M. J. (2011). Alternative methods for assessing mediation in multilevel data: The advantages of multilevel SEM. *Structural Equation Modeling*, Vol. 18 No. 2, pp. 161-182.

Rafferty, A. E., and Griffin, M. A. (2004). Dimensions of transformational leadership: Conceptual and empirical extensions. *The leadership quarterly*, Vol. 15 No. 3, pp. 329-354.

Shamir, B. (1990). Calculations, values, and identities: The sources of collectivistic work motivation. *Human relations*, Vol. 43 No. 4, pp. 313-332.

Shin, S. J. (2015). Leadership and creativity: The mechanism perspective. *The Oxford handbook of creativity, innovation, and entrepreneurship*, Vol. 18 No. 1, pp. 17-30.

Somech, A., and Drach-Zahavy, A. (2013). Translating team creativity to innovation implementation: The role of team composition and climate for innovation. *Journal of management*, Vol. 39 No. *3*, pp. 684-708.

Tang, G., Chen, Y., van Knippenberg, D., and Yu, B. (2020). Antecedents and consequences of empowering leadership: Leader power distance, leader perception of team capability, and team innovation. *Journal of Organizational Behavior*, Vol. 41 No. 6, pp. 551-566.

Thayer, A. L., Petruzzelli, A., and McClurg, C. E. (2018). Addressing the paradox of the team innovation process: A review and practical considerations. *American Psychologist*, Vol. 73 No. 4, pp. 363-374.

Tian, H., Iqbal, S., Akhtar, S., Qalati, S. A., Anwar, F., and Khan, M. A. S. (2020). The impact of transformational leadership on employee retention: mediation and moderation through organizational citizenship behavior and communication. *Frontiers in Psychology*, Vol. *11*, pp. 314-326.

Tierney, P., Farmer, S. M., and Graen, G. B. (1999). An examination of leadership and employee creativity: The relevance of traits and relationships. *Personnel psychology*, Vol. 52 No. 3, pp. 591-620.

Van der Voet, J., and Steijn, B. (2021). Team innovation through collaboration: How visionary leadership spurs innovation via team cohesion. *Public Management Review*, Vol. 23 No. 9, pp. 1275-1294.

van Knippenberg, D. (2017). Team innovation. *Annual Review of Organizational Psychology and Organizational Behavior*, Vol. *4*, pp. 211-233.

Van Knippenberg, B., and Van Knippenberg, D. (2005). Leader self-sacrifice and leadership effectiveness: the moderating role of leader prototypicality. *Journal of applied psychology*, Vol. 90 No. 1, pp. 25-37.

Volmer, J., Spurk, D., and Niessen, C. (2012). Leader–member exchange (LMX), job autonomy, and creative work involvement. *The leadership quarterly*, Vol. 23 No. 3, pp. 456-465.

Wallace, C., and Chen, G. (2006). A multilevel integration of personality, climate, self-regulation, and performance. *Personnel Psychology*, Vol. 59 No. 3, p. 529-557.

West, M. A. (1990). The social psychology of innovation in groups.

West, M. A., and Anderson, N. R. (1996). Innovation in top management teams. *Journal of Applied psychology*, Vol. 81 No. 6, pp. 680-693.

Yuan, F., and Zhou, J. (2015). Effects of cultural power distance on group creativity and individual group member creativity. *Journal of Organizational Behavior*, Vol. 37 No. 7, pp. 990-1007.

Zhou, J., and George, J. M. (2003). Awakening employee creativity: The role of leader emotional intelligence. *The leadership quarterly*, Vol. 14 No. 5, pp. 545-568.