Transformational Leadership and Workplace Spirituality : A Structural Model of Team Effectiveness

** Nandana Prabhu K.P.*
*** Lewlyn L.R. Rodrigues*
**** Yogesh Pai*

Abstract

The purpose of this research endeavor was to evaluate the effects of team transformational leadership and workplace spirituality on team effectiveness. This research sought to determine the impact of team culture, embedded in team transformational leadership, on team effectiveness. Further, it evaluated the comparative effects of the constructs of team interaction process and workplace spirituality on creation of process effects that lead to team effectiveness. This study adopted the partial least squares structural equation modeling (PLS-SEM) approach to test the hypotheses relating to the relationship among the exogenous constructs such as team transformational leadership, team interaction process, and workplace spirituality with the endogenous construct, that is, team effectiveness. This research investigated the relationship among these constructs on a sample of 130 teams of IT organizations. Situating team transformational leadership as a cultural construct in the team effectiveness research discourse ; the importance of internalized intrinsic motivation resulting from workplace spirituality in influencing team effectiveness ; empirical validation of the status of transformational leadership as a precursor to workplace spirituality ; the need to combine 'outside-in' and 'inside-out' approaches to team processes so as to increase the degree of team effectiveness ; performance - determining influence of team processes that outshines the performance-determining impact of transformational leadership were the specific contributions of this study to team effectiveness research. The need to cultivate team culture embedded in transformational leadership behaviors, team - level necessity to pay attention to the 'spiritual' side of team members, situating team leadership behaviors vis-à-vis member interaction behaviors in the context of team effectiveness were the managerial implications of this research.

Keywords: **transformational leadership, workplace spirituality, team interaction process, team effectiveness**

JEL Classification: M12, M14, M19, M54, Z12

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IT organizations are using teams in such an increasing fashion that they are considered to be the foundational premises of modern organizations (Costa, Passos, & Bakker, 2014). However, team functioning becomes effective only if the inevitable 'process losses' are minimized (Kozlowski & Chao, 2018). Team effectiveness is accordingly defined, for the purpose of this research endeavor, essentially as a function of teams' performance as 'performing units' over time and team learning and fulfillment, which result from team's work (Hackman,

**Associate Professor,* School of Management, Manipal Academy of Higher Education, Manipal - 576 104, Karnataka. E-mail : nandan.prabhu@manipal.edu
** *Professor & Head (Corresponding Author),* Department of Humanities and Management, Manipal Institute of Technology, Manipal Academy of Higher Education, Manipal - 576 104, Karnataka. E-mail : i.rodrigus@manipal.edu
****Associate Professor,* School of Management, Manipal Academy of Higher Education, Manipal - 576 104, Karnataka. E-mail : Yogesh.pai@manipal.edu
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2002). Process losses, the research problem that this research addresses, are defined as inefficiencies or internal breakdowns that keep a group from doing as well as it theoretically could, given its resources and member talents (Ibid, 2002). Process losses are held to be the results of team member behavior that reduces team effort. Research community has, therefore, laid emphasis on improving the efficacy of team processes (Lvina, Johns, & Vandenberghe, 2018) in order to reduce process losses. In this context, this paper investigates the effect of two process constructs, that is, team interaction process and workplace spirituality in order to evaluate how the problem of 'process losses' in IT teams can be reduced.

This paper situates the construct of transformational leadership, at the team - level of analysis, as the construct that influences both team interaction process and workplace spirituality. Team members can be motivated to put extra efforts in order to facilitate the execution of process effectiveness criteria by verifying their identities (Wilkin, de Jong, & Rubino, 2018). However, this calls for transformative leadership behaviors within teams (Prabhu, Rodrigues, Kumar, & Pai, 2019). Team transformational leadership is defined, for the purpose of the present research, as the leadership behaviors that are present among team members with regard to idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration.

Accordingly, this study conceptualized three research objectives. The first objective is to know the association between team transformational leadership and team effectiveness. The second objective of this research is to evaluate the process effects of team interaction process and workplace spirituality. Lastly, this research intended to investigate the role of workplace spirituality in bringing about team effectiveness.

Review of Literature and Hypotheses Development

Though prior research on team processes examined the effect of a few team processes (Balakrishnan, Kiesler, Cummings, & Zadeh, 2011 ; Kozlowski & Chao, 2018 ; Tanghe, Wisse, & Van Der Flier, 2010) that belong to the 'inside-out' perspective or what is designated in the team process literature as 'emergent states' (Lvina et al., 2018), no prior study has investigated the effect of workplace spirituality (WS) on team effectiveness (TE) as a team process construct. 'Inside-out' perspective of TE is defined as the view that considers psychological processes and variables that operate within individual team members. The construct of WS captures team members' experiences of meaning, connectedness, inner life, and transcendence at the workplace. As these components of WS come into being as 'emergent states,' it is an 'inside-out' perspective of the team process. Prior research hasn't examined the 'process effect' of WS on TE. Further, there is a dearth of research on the relative impact of team processes that represent 'outside-in' approach and those team processes that belong to 'inside-out' perspective or what is known as 'emergent states' (Lvina et al., 2018).

Against this background, this research has investigated the relative impact of team interaction process, a construct that captures team processes that belong to 'outside - in' approach and workplace spirituality, a construct that pertains to 'inside - out' approach to conceptualizing team processes. The construct of team interaction process (TIP) captures the effort exerted by team members, reflexivity among team members, and the full application of their knowledge and skills (Wageman, Hackman, & Lehman, 2005). Therefore, it is an 'outside-in' perspective of team processes. The construct of team interaction process (TIP), which captures team processes, was conceptualized by Hackman (2002) as the :

> Extra effort put in by team members resulting from increased team commitment and reduced social loafing, the adoption of performance strategy imbued with innovative, task-appropriate work procedures that abandon mindless reliance on habitual routines, appropriate sharing of knowledge, and development skills of team members that reduce inappropriate weighting of member contributions. (p.170)

The underlying rationale in conceptualizing a team effectiveness model in which there are two process constructs, which represent both outside - in and inside - out approaches, is that this will help towards evolving a better understanding of reduction in process losses that maximize the degree of team effectiveness.

(1) Team Transformational Leadership and Team Effectiveness : Verification of salient identities of individuals in an organizational context, especially in the context of groups, leads to task meaningfulness and sense of community. Further, identity theorists have argued that individuals seek support for their identity, which may be represented by their working self. Team transformational leadership (TTL) behaviors (Avolio & Bass, 2004) fulfil this need for identity support that individuals seek. Self-work integration or the integration of work role identity with one's personal identity standards is the essence of inner life (Pawar, 2009). In short, identity theories provide theoretical justification that points towards transformational leadership's role in creating an atmosphere of collective efficacy, mission identification, intrinsic motivation, transcendence of self-interests, sense of self-efficacy, and heightened spirit at work (Ambrose, Matthews, & Rutherford, 2018). The theory of motivational effects of charismatic leadership based on the self-concept has shown how transformational leadership inspires, among their followers, attributes such as leader identification, mission identification, and self-sacrificial behavior through its motivational processes that inspire greater team performance. Moreover, the theory of team-member exchange views team leadership as a collective concept (Seers, 1989).

Further, team leadership framework contends that transformational leadership within a team provides compelling direction and expert coaching (Hackman, 2002 ; Scott, Jiang, Wildman, & Griffith, 2018) to facilitate the effective functioning of teams. Therefore, team transformational leadership is expected to bring about TE. Accordingly, the following hypothesis is framed :

↳ **H1 :** There is a significant association between team transformational leadership and team effectiveness.

(2) Mediating Role of Workplace Spirituality : Transformational leaders facilitate mutual co-ordination and cooperation by inspiring a win - win proposition as a result of their shared vision. Thus, they also enable conflict management by inspiring team members to go beyond the win - lose mindset, and thus they lead teams towards higher levels of team performance through the resulting sense of engaging and meaningful work. Transformational leaders inspire team members to rise beyond their self-interest by the articulation of shared vision. Further, transformational leadership is known to enhance the team supporting behaviors and foster the sense of collective identity (Shamir, House, & Arthur, 1993). The resulting sense of community leads to team identification among team members. Therefore, collective goals gain priority among team members.

Prior research has documented the extent of transformational leadership's influence on team performance for a co-operative approach to conflict management (Kumar, 2012 ; Pattanaik, Modi, & Budhiraja, 2015 ; O'Neill & McLarnon, 2018), which improves team coordination, and the resulting spiritual connection is expected to increase team performance. Team performance is not merely the aggregation of work of team members. Rather, it is the result of the manner in which team members interact mutually and utilize each other's expertise. Therefore, prior research is indicative of the beneficial impact of transformational leadership in general, and TTL, in particular, on team performance (Sivasubramaniam, Murry, Avolio, & Jung, 2002). Further, aligned individuals perceive their work as being consistent with the organizational purpose, which decreases competition and enhances cooperation among groups. This increases the sense of community and thus increases the degree of TE. It is important to notice that energizing behavior, which is essentially the result of WS, is the result of organizational purpose, that is, the vision provided by transformative leadership rather than 'inducement - commitment' framework. This proposition of the link between employee alignment and the consequent cooperation within and among groups has significant implications for strengthening TE.

Prior research has argued that individual transformation, which acts as the propelling force of organizational change, is facilitated by transformational leadership. Transformational leadership's attempts to verify team members' identities through their behaviors of inspirational motivation, individualized consideration, and intellectual stimulation are expected to facilitate TE through the experiences of WS such as engaging work, sense of community, and the feelings of spiritual connection among fellow team members (Kinjerski & Skrypnek, 2006 ; Wageman et al., 2005). Therefore, the following hypothesis is framed :

↳ **H2 :** Workplace spirituality mediates the relationship between team transformational leadership and team effectiveness.

(3) Mediating Role of Team Interaction Process : TIP is conceptualized for the purpose of this research as the extra effort that team members put in, and the full application of knowledge and skills of team members in order to meet team performance objectives (Wageman et al., 2005). In this connection, TE is theorized to be the result of efficient execution of task-appropriate and situation-appropriate 'process effectiveness criteria' consisting of team's effort, employment of dynamic performance strategies, and the full application of relevant knowledge and skills of team members. The 'process effectiveness criteria' or the TIP itself is influenced by expert coaching and compelling direction that team members receive from either team leaders or team members (Hackman, 2002). Further, prior research has provided evidence to show that shared leadership (Daspit, Ramachandran, & D'Souza, 2014) in teams leads to better motivational and social processes by ensuring higher collective efficacy and lower relationship conflict (Carson, Tesluk, & Marrone, 2007). This evidence is reinforced by the finding that supportive leadership style leads to an increased group organizational citizenship behavior ; whereas, directive leadership style decreases the same (Euwema, Wendt, & van Emmerik, 2007).

TIP consists of effort put in by the team members, active task - appropriate and situation-appropriate performance strategies, and the full utilization of knowledge and skills of team members are shown by prior research as the mediating mechanisms in attaining TE (Hackman, 2002). In this regard, TTL behaviors are expected to increase organization citizenship behavior, which symbolizes extra-role behaviors because these transformational behaviors are expected to induce self-sacrificial behaviors in addition to augmentation of efforts (Shamir et al., 1993). Transformational leadership is expected to reduce both social loafing and absence of team commitment as transformational behaviors are theoretically presupposed to end up in compelling direction to team members. This would increase team performance, the first dimension of TE. Further, transformational behaviors that the team members or team leaders display, relating to intellectual stimulation (Avolio & Bass, 2004), end up in compelling direction that orients team members towards the execution of well - aligned performance strategies. This would make a team a performing unit, the second dimension of TE. Moreover, transformational behaviors within a team that pertain to individualized consideration facilitate full utilization of knowledge and skills of team members (Wageman et al., 2005) so that team members' individual learning and well - being that consist of internal work motivation, satisfaction with growth opportunities, and general satisfaction will improve. Therefore, the following hypothesis is framed:

↳ **H3 :** Team interaction process within teams mediates the relationship between team transformational leadership and team effectiveness.

(4) Extension of the Theory by Adopting Serial Mediation : Hayes and Preacher (2013) discussed the theory extension of a simple mediation model by extending the theory by including two mediators in order to explain the relationship between independent and dependent variables. Accordingly, this paper proposes the theory extension by positing that workplace spirituality leads to the strengthening of team interaction process, and thus the

relationship between team transformational leadership and team effectiveness is serially mediated by WS and TIP, respectively.

Prior research, in this connection, provides ample theoretical grounding to posit leadership as an antecedent of WS (Pawar, 2009; Mckee, Driscoll, Kelloway, & Kelley, 2011). In this regard, the role of leaders in nurturing the idea of WS at individual, group, and organizational levels (Pawar, 2009) is duly recognized. Moreover, the research discourse on WS states that transformational leadership is a precursor to WS (Ibid, 2009). The WS research discourse posits leadership as an antecedent that influences individual spiritual experiences at the workplace (Ibid, 2009). The theory of motivational effects of transformational leadership based on the self-concept (Shamir et al., 1993) has shown that transformational leaders bring about collective identity, task meaningfulness, and thus facilitate the transcendence of self-interests. This would facilitate synergic gains resulting from shared commitment to team and its work. Further, WS brings about self - work integration (Sheep, 2006) and thus contributes to 'inner life' (Pawar, 2009) of employees.

This would help increase team commitment in a team setting as the TIP (Wageman et al., 2005) leads to collective self-efficacy as well as collective identity through the process of value internalization, valence of goal establishment, and valence of efforts (Shamir et al., 1993). Further, well-aligned performance strategies will make a team a performing unit. Furthermore, the full utilization of knowledge and skills of team members, the third dimension of TIP (Wageman et al., 2005) will increase the learning and well-being of team members, an aspect of TE (Hackman, 2002). Therefore, the following hypothesis is framed :

↳ **H4 :** Workplace spirituality and team interaction process mediate sequentially the relationship between team transformational leadership and team effectiveness.

Methodology

(1) Respondents and Sample Size : The current research intends to investigate the degree of TE that exists among teams consisting of software engineers as also the efficacy of its driver constructs. The data were collected from software engineers working with their respective teams in software companies operating in India. Software engineers are defined as those who are working on software development projects as part of their respective teams. This study collected its data from software engineers of IT companies whose headquarters are in Bengaluru. As this paper's focal units of study are teams that perform interdependent work, IT companies were chosen for the study. The reason for selection of Bengaluru for this study is the presence of all major IT organizations of India (NASSCOM, 2017).

(2) Participants and Procedure : Thirty seven companies were identified, which met the criterion which this study used for the purpose of inclusion of companies in this study, that the companies should have been in software development for at least 10 years and should have more than 500 employees. Data on the same were procured from the database of NASSCOM. Adopting the approach recommended by Ramaprasad, Prabhu, Lakshminarayanan, and Pai (2017), requests were sent to the HR managers of these companies to participate in the survey, and 15 companies responded positively. HR managers of these companies were requested to make a random choice of 20 teams for the purpose of responding to the study's survey instrument. Of the 170 teams from whom the responses were collected, the usable responses were restricted to those of 130. Responses of the remaining teams could not be used due to incomplete data. All participating team members were identified with the unique team IDs supplied by the respective HR managers. Data were collected with the help of a research assistant. Questionnaires were administered to the participants only after taking their due consent. Data were collected during a period of eight months from May 2017- December 2017.

The survey instrument was expected to be filled up by all team members. Each team had a unique team id. Further, individual team members' identification with their respective teams was also ensured with the help of team members' ids. The size of the project teams, chosen for this study with the active help of the HR managers of the respective companies, varied between 5 -7 members each.

Among the respondents, 64% were male and 36% were female ; 26% of the respondents belonged to the age group of 25 - 35 years ; 26% of the respondents had undergraduate qualifications ; and 26% of the respondents had less than 2 years of work experience.

(3) Measures

(i) Team Transformational Leadership : This study used a team multi-factor questionnaire (Avolio & Bass, 2004), which is a 25-item scale to capture the construct of team transformational leadership (TTL). Accordingly, team transformational leadership is a construct that this study measures at the team level. Cronbach's alpha value of the measure used in this study was 0.902. Responses were captured on a scale of 1 to 5, wherein 1 = *strongly disagree* and 5 = *strongly agree*.

(ii) Team Interaction Process : The construct of TIP (Wageman et al., 2005) measures the team processes that emerge within a team even as a team keeps functioning. As prior research on team processes (Lvina et al., 2018) suggests, the construct of team interaction process is so conceptualized as to include the three variants of team processes, that is, action process, interpersonal process, and transition process. The study used the scale of TIP included in the 'team diagnostic survey' (Wageman et al., 2005), which is a 9 - item scale, to capture this construct. Cronbach's alpha value of measure was 0.847. Responses were captured on a scale of 1 to 5, wherein 1= *strongly disagree* and 5 = *strongly agree*.

(iii) Workplace Spirituality : Workplace spirituality (Kinjerski & Skrypnek, 2006) is a construct that measures the 'spiritual experiences' at the workplace. This construct is the team-level adaptation of the construct 'spirit at work' (Prabhu, Rodrigues, & Ramana Kumar, 2016), which was originally conceptualized as the individual level construct (Kinjerski & Skrypnek, 2006) in order to tap the individual experiences of spirituality at the workplace. Cronbach's alpha value of the measure was 0.881. Responses were captured on a scale of 1 to 5, wherein 1 = *strongly disagree* and 5 = *strongly agree*.

(iv) Team Effectiveness : Team effectiveness (Wageman et al., 2005) is the endogenous construct of this research endeavor. It is operationalized as the individual well-being of team members and interpersonal team processes. This study used the 11-item team effectiveness scale of the 'team diagnostic survey' in order to capture the construct of TE. Cronbach's alpha value of the construct was 0.835. Responses were captured on a scale of 1 to 5, wherein 1= *strongly disagree* and 5 = *strongly agree*.

Analysis and Results

(1) Data Screening : The sample observations collected in this study had no missing values. No 'straight lining' response pattern was found in any of the sample cases. Outliers were first removed, and then, appropriate values were replaced in place of those removed data points by using mean replacement method. The values of skewness and kurtosis of all variables ranged between the acceptable range of +1 and -1. Kolmogorov - Smirnov and Shapiro - Wilk tests were carried out to test the normality of data. Data distribution was found to be normal. No

collinearity was found among exogenous constructs of this study. Tolerance values of all exogenous constructs were above 0.20, and the VIF values were below 5.00.

(2) Common Method Variance : As the self-report data collected from team members might have created common method bias issues, items of the questionnaire were randomized in the questionnaire prior to the administration of the survey instrument among the respondents (Podsakoff, 2003). Participants were duly aware of the organizational consent for the study as well as about the confidentiality and anonymity of their responses. Therefore, they were aware of the absence of organizational prejudice if they chose to give socially undesirable responses. After the collection of data, this study carried out Herman's single-factor test so as to rule out the probable presence of common method variance. Maximum variance extracted by a single factor was 35.58%. As the variance attributable to any single component was not more than 50% (Mat Roni, 2014), there was no evidence to conclude that there was common method bias in the data.

Table 1. Means, Standard Deviations, and Correlations

Variables	Mean	*SD*	*TTL*	*WS*	Age	Education	Experience	Gender
TE	3.94	0.73						
TIP	3.79	0.66						
TTL	3.71	0.33	1					
WS	3.67	0.32	0.63***	1				
Age[1] (%)	25.5	0.42	-0.14**	-0.108	1			
Education[2] (%)	35.9	0.47	0.085*	-0.010	-0.073	1		
Experience[3] (%)	25.97	0.36	-0.11**	-0.138	0.475**	0.019	1	
Gender[4] (%)	35.67	0.48	-0.057	-0.039	0.035	-0.019	-0.037	1

Note.*** implies $p < 0.01$, ** implies $p < 0.05$ and* implies $p < 0.10$

[1]Percentage of respondents who are of the age between 25-35 years.

[2]Percentage of respondents who have a minimum of undergraduate degree.

[3]Percentage of respondents who have a minimum work experience of two years.

[4]Percentage of female respondents.

(3) Descriptive Statistics. The Table 1 presents the descriptive statistics and correlations among the variables of the study.

Table 2. Summary Results for Reflective Measurement Models

Latent Variable	Item Code	Elements that are Captured by Manifest Indicators of the Constructs of the Study	Convergent Validity			Internal Consistency
			Loadings	Indicator Reliability	AVE	Composite Reliability
			>0.70	> 0.50	> 0.50	0.60 - 0.90
TE	*TE1*	Joy in interaction with one's teammates.	0.749	0.56	0.628	0.901
	TE2	Appreciation of the fact of knowledge of one's teammates.	0.824	0.68		
	TE3	Understanding that one does well when the team performs well.	0.832	0.69		
	TE4	Satisfaction with the team's functioning.	0.761	0.58		
TIP	*TIP1*	Team members' shared commitment that expresses itself in extra effort.	0.763	0.58	0.556	0.878

	TIP2	Team members' motivation towards ensuring team's success.	0.780	0.61		
	TIP3	Fair distribution of workload and the absence of social loafing.	0.733	0.54		
	TIP4	Team's adoption of innovative methods of work.	0.744	0.55		
	TIP5	Display of reflexivity in team's work going beyond mindless routines.	0.723	0.52		
	TIP6	Ease of plans in carrying out the tasks.	0.720	0.52		
	TIP 7	Actively sharing one's knowledge and skills with other team members.	0.757	0.57		
	TIP 8	Skills in learning lessons from experiences.	0.740	0.55		
TTL	*TTL1*	Display of extraordinary talent and competence.	0.705	0.50	0.535	0.899
	TTL2	Behavior of team members that builds respect for one another.	0.743	0.55		
	TTL3	Clarifying the central purpose underlying one's actions.	0.726	0.53		
	TTL4	Team members' talk about trusting each other to overcome others' difficulties.	0.715	0.51		
	TTL5	Emphasizing collective sense of mission.	0.755	0.57		
	TTL6	Envisioning exciting new possibilities.	0.726	0.53		
	TTL7	Talking optimistically about the future.	0.729	0.53		
	TTL 8	Talking enthusiastically about work.	0.756	0,57		
	TTL 9	Encourage each other to rethink ideas which had never been questioned before.	0.715	0.51		
	TTL10	Team member's focus on developing each other's strengths.	0.744	0.55		
WS	*WS1*	Finding meaning at work.	0.772	0.60	0.556	0.893
	WS2	Integration of personal meaning in life with meaning at work.	0.719	0.52		
	WS3	Feeling of gratefulness for involvement with work.	0.781	0.61		
	WS4	Experience of complete joy and ecstasy at work.	0.708	0.50		
	WS5	Sharing a strong sense of meaning and purpose at work with one's co-workers.	0.737	0.55		

(4) Reflective Model Assessment

(i) Reliability Analysis : All latent variables of the measurement models in the present study demonstrate high levels of internal consistency reliability. This is illustrated by the values of Cronbach's alpha and composite reliability of constructs, which are higher than the threshold value of 0.70 (Hair Jr, Hult, Ringle, & Sarstedt, 2016). Indicator reliability of all constructs is also above the threshold value of 0.50 in the present study. The threshold value of outer loadings is 0.70. Indicators of constructs of the present study demonstrate values, which are above this threshold value. It may be noted that the data processing adopted in this study eliminated those indicators which had weak outer loadings and indicator reliability. The Table 2 presents the results of reflective measurement models.

(ii) Discriminant Validity : There exists discriminant validity among all constructs of the study as shown by the Fornell and Larcker criterion (1981). Heterotrait - monotrait ratio (HTMT) was used to assess discriminant validity of the constructs. The HTMT confidence intervals did not include 1, which implies that the study constructs are distinct from each other. The Table 3 presents the values relating to discriminant validity.

(iii) Data Aggregation : The level of analysis of data was at the team level of analysis. Therefore, the self-report

Table 3. Discriminant Validity : Fornell - Larcker Criterion

Variables	*TE*	*TIP*	*TTL*	*WS*
TE	0.740			
TIP	0.611	0.792		
TTL	0.250	0.298	0.745	
WS	0.533	0.588	0.300	0.732

data on all constructs were aggregated to team - level. Within-group agreement was verified for the purpose of seeking justification for data aggregation as the level of analysis was at the team - level. Calculation of rw_g scores supplied the statistical evidence for the data aggregation. The mean rw_g values are above the threshold value of 0.70 for all constructs. The threshold values of ICC (1) and ICC (2) are 0.12 and 0.70, respectively (Bliese, 1998). The values of ICC (1) and ICC (2) of the study's constructs are above these threshold values. The intraclass correlation coefficient (ICC) is defined as "the expected correlation between any two randomly chosen individuals in the same group" (Heck, Thomas, & Tabata, 2011, p.8). Therefore, team-level aggregation of data was justified. This study used control variables of age, gender, education, and work experience of respondents in order to control for their effect on team effectiveness.

(5) Structural Model Assessment : We began the assessment of the structural model by entering the control variables of the study, that is, age, gender, education, and work experience. Then, we entered the first mediator of the model, that is, workplace spirituality and thereafter, we entered the second mediator, that is, team interaction process. The mediation hypotheses were tested through the Process macro (Hayes & Preacher, 2013) using SPSS. SPSS was used to test the hypotheses on mediation. Process Macro (Ibid, 2013) was used to run the mediation analysis. Bootstrapping procedure was used while running the mediation analysis (Ibid, 2013). The Figure 1 presents the path coefficient value of the direct effect of TTL on TE.

The Figure 2 captures the serial mediation model adopted in this study. The path estimates within the 95% bias corrected bootstrapped confidence intervals are presented in the Table 4.

The Table 5 presents the values of the indirect effects. Age is significantly related to team effectiveness ($\beta = 0.07, p < 0.01$). However, the other three control variables, that is, education ($\beta = 0.04, p > 0.05$), experience ($\beta = -0.09, p > 0.05$), and gender ($\beta = -0.02, p > 0.05$) do not exhibit statistically significant results. Consistent with H1, team transformational leadership is positively related to team effectiveness. Furthermore, there is a statistically significant support for the mediating effect of workplace spirituality in the relationship between team transformational leadership and team effectiveness (H2). Similarly, H3, that proposes the mediating effect of team interaction process in the relationship between team transformational leadership and team effectiveness, is also supported. Furthermore, H4 also receives statistical support for the hypothesized positive impact of sequentially mediated impact of team transformational leadership through workplace spirituality and team interaction process.

(i) Coefficient of Determination : Figure 2 shows the value of coefficient of determination of the research model

Figure 1. Path Coefficient of the Direct Effect of *TTL* on *TE*

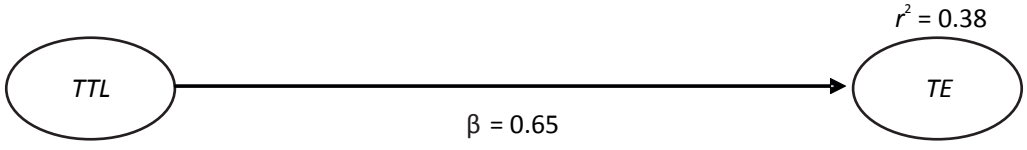

Figure 2. Path Coefficients of the Serial Mediation Model

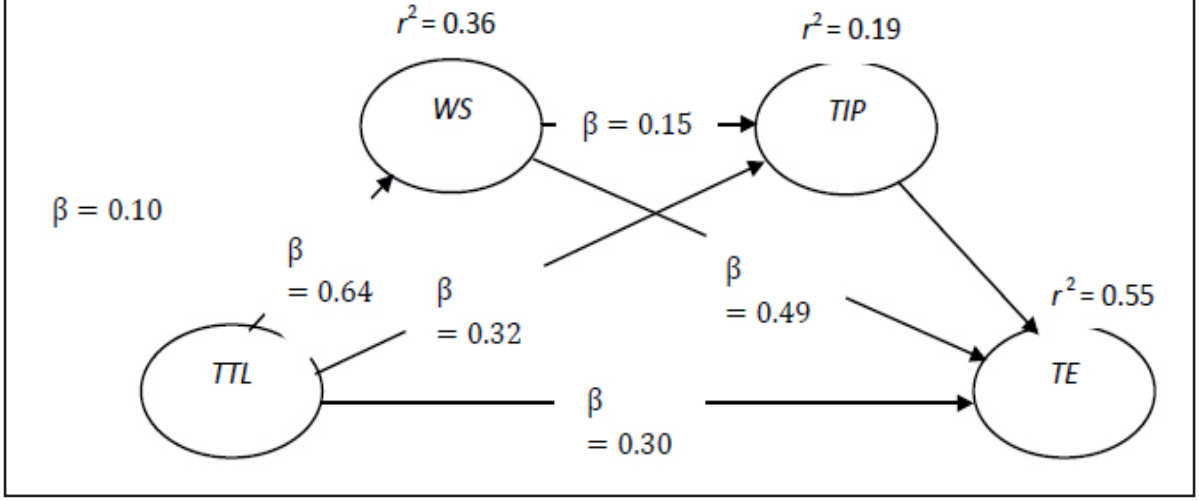

Table 4. Path Coefficients of the Structural Model

Direct Effect	Beta	Standard Error	*t* - value
TTL --> TE	0.30	0.03	8.74
TTL --> WS	0.64	0.03	20.63
TTL --> TIP	0.32	0.05	6.97
WS --> TE	0.49	0.03	15.66
WS --> TIP	0.15	0.04	3.56
TIP --> TE	0.10	0.03	4.05

Table 5. Two - Stage Serial Mediation Output

Indirect Paths	Indirect effect	Standard Error	LLCI	ULCI	Decision
TTL --> WS --> TE	0.31	0.02	0.26	0.36	Supported
TTL --> TIP --> TE	0.03	0.01	0.02	0.05	Supported
TTL --> WS --> TIP --> TE	0.01	0.00	0.00	0.02	Supported

of this study. The coefficient of determination of team effectiveness, the endogenous construct of the study (i.e. team effectiveness), is 0.55. Thus, this implies that antecedents and mediators of the study's model explain 55% of the variance of team effectiveness. The *R* - squared values of workplace spirituality and team interaction process are 0.36 and 0.19, respectively.

(ii) Predictive Relevance : We calculated the predictive relevance of the model by adopting the guidelines of Hair et al. (2016). Cross-validated redundancy index was used in order to state the values of Q^2 measure. Acceptable Q^2 value becomes acceptable if it is other than zero (Chin, 2010). The model of this study has the Q^2 values of this study's model ranging between 0.05 and 0.28 ($TIP = 0.05$; $WS = 0.14$; $TE = 0.28$). These Q^2 values are satisfactory

as they meet the evaluation criterion that it is different from zero (Hair et al., 2016). Accordingly, this study's model has predictive relevance.

(iii) Model Fit : Standardized root mean square residual (SRMR) was used as a model fit measure. Hair et al. (2016) defined SRMR as "the root mean square discrepancy between the observed correlations and the model-implied correlations" (Ibid, 2016, p.193). Even as SRMR is held to be an absolute measure of fit, the value of zero indicates perfect fit. However, if this value is less than 0.08, it is regarded as a value which is indicative of good fit (Hu & Bentler, 1998). The SRMR value for the model of this study is 0.05. RMS_{theta} value of this study's model is 0.12. This value also happens to be the threshold value of a good fit. Accordingly, these model fit values indicate the presence of adequate model fit in the study's model.

(iv) Effect Size : Cohen's f^2 (Cohen, 1992) is used by this study to calculate the effect size of the relationships conceptualized in this study's model. This value is ascertained by measuring the effect on outcome variable with and without the predictor variable. The model of the study demonstrates overall effect size of 0.17 (excluded team transformational leadership). The effect sizes of *WS* and *TIP* are 0.25 and 0.021, respectively. Accordingly, the effect sizes of *TTL* and *WS* are large, and the effect size of *TIP* is small.

Discussion

This research endeavor has contributed to the role of transformational leadership in TE research discourse in several ways. First, this study has shown the positive effect of TTL on TE. In this regard, it has demonstrated the importance of transformational leadership as it initiates team processes. Secondly, this research has provided empirical support to the theoretical articulation of prior research (Pawar, 2009) that transformational leadership is a precursor to WS. Third, this research endeavor has established the relationship between WS and TE. Fourth, this research has shown that WS and TIP mediate the relationship between transformational leadership in teams and their effectiveness. Lastly, this research has shown that the construct of WS goes beyond the effect of TIP in increasing the level of TE.

Conclusion

This research had three research objectives. The first research objective was to investigate the direct effect of TTL on TE. This study has demonstrated that the association between TTL and TE is significant. The second research objective of this study was to investigate the comparative process effects of TIP and WS on TE. TIP was used as a process construct to represent 'outside-in' viewpoint of team processes, while WS was used to represent 'inside-out' viewpoint of team processes. Further, the study has provided research support to the H4, which states serially mediated effect of WS and TIP in the relationship between TTL and TE. The third research objective of this study was to examine the process effect of workplace spirituality on TE. This research has shown that transformational leadership behaviors that the team members display would bring about WS. Therefore, transformational leadership behaviors of inspirational motivation, idealized behavior, and individualized consideration lead to verification of team members' identities, help them integrate their personal identity with work role identity, and would thus help them find meaning at work and experience self-work integration or inner life. Thus, this brings about a sense of community among team members. As a result, the WS would come into being.

Theoretical Implications

This research endeavor has several theoretical implications for TE research discourse. First, this research endeavor has examined the effect of 'climate' of TTL on team members' behavior by investigating the effect of TTL on TE. Theoretically, this implies that the collective climate of leadership that the transformational leadership behaviors produce is no less important than the individual - level transformational leadership. This implies that TE is not merely a function of enabling conditions, though a climate construct like TTL does not play an equally strong influencing role in bringing about TE even as one can, nevertheless, negate its importance. This can be seen in the greater effect sizes of WS and TIP than that of TTL. Nevertheless, it is TTL, which is theorized to initiate WS and TIP. Second, this research endeavor has contributed to advance the TE research discourse by measuring the comparative impact of 'outside-in' and 'inside-out' approaches to team processes, which are captured by TIP and WS, respectively. Third, this research has provided empirical evidence to demonstrate that transformational leadership is a precursor to WS experiences.

The explanation for the same can be found in the motivational processes that the TTL behaviors initiate, which can be found in the theory of motivational effects of charismatic leadership (Shamir et al., 1993). The motivational processes inherent in transformational leadership behaviors enable WS to produce not only the mediating effect, but also the incremental process effect on TE. The transformational leadership behaviors result in verification of identities of team members, and the consequent individualized consideration of 'idealized self' and 'working self' of team members. This will inspire them towards augmentation of their efforts and hence, the consequent positive impact on team performance, in particular, and TE in general.

Managerial Implications

The importance of WS vis-à-vis TIP, shown by this research, implies that software organizations should not nurture the notion that their employees look at their work only from a calculative, 'cost-benefit' point of view. Therefore, this implies that employees in software organizations accord importance to engaging work, spiritual connection, and a sense of community. In other words, they have an innate need for meaning even in their work life. However, the team processes such as augmentation of efforts and full application of knowledge and skills of team members also exercise their influence than on TE, in terms of performance. Therefore, this calls for the adoption of a balanced approach to the importance to be accorded to 'outside-in' and 'inside-out' factors or emergent states of team processes. Thus, this leads to the inference that the WS, which software employee's experience, is more important than the organization. This implication calls for the need to pay attention to the 'spiritual' side of employees by making their work engaging, striving to develop a sense of community among team members, and thus enabling connectedness among team members.

Limitations of the Study and Directions for Future Research

Omission of fixed effects is the limitation of this research endeavor. This study has studied only the team-level variables. Further, the data were collected from diverse software organizations. While we may characterize the team-level variables as Level 1 variables, they are nested under firm-level variables or Level 2 variables. Therefore, Level 2 variables also exercise their effect on dependent variable of the model, which would not have been measured. Therefore, there exists a need to omit these Level 2 'fixed effects' to ensure that there is no problem of endogeneity. However, this research has not considered the omission of fixed effects.

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About the Authors

Dr. Nandana Prabhu K. P. is an Associate Professor at the School of Management, Manipal Academy of Higher Education, Manipal, Karnataka. His research interests are in the areas of HR & leadership, HR & ethics/corporate social responsibility, and HR & cross - cultural management.

Dr. Lewlyn L. R. Rodrigues is a Professor and Head of the Department of Humanities and Management at Manipal Institute of Technology, Manipal Academy of Higher Education, Manipal, Karnataka. His research interests are in the areas of employment/industrial relations, HR strategy, and career management.

Dr. Yogesh Pai is an Associate Professor at the School of Management, Manipal Academy of Higher Education, Manipal, Karnataka. His research interests are in the areas of HR technology, HR & emerging markets, and HR & knowledge management.