

Review Based Study on Team Climate for Innovation Implications on Team Effectiveness and Outcomes

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Abstract: This review articles focuses on team climate for innovation which mediates the relationship between team task structure and innovative behavior, job satisfaction, affective organizational commitment, and work stress. Effects of team task structure on team climate for innovation and team outcomes. For instance, public sector executives may increase their TE through enhanced autonomy and the private sector executives may also achieve higher TE through increasing cohesion, as interpreted from the findings. Based on this framework, I compared and critically analysed the four articles included in this which provide examples of team climate for innovation how its impact on team effectiveness and team outcomes. Suggestions for better teamwork have been made on the basis of preliminary scores and observable differences. The authors explained about the need in understanding of the effect of team climate for innovation in the workplace. This research focuses on impact of team leader personality on team climate for innovation and outcome. It shows how HR professional can utilize the study to negotiate teams more effectively and to build trust and cooperative relationships between stake holders. It will focus on its relationship with team climate and its impact on team effectiveness.

Key words: Team Climate, Team effectiveness (TE), Team empowerment (TE_m), Team Functioning (TF), Task Structures.

INTRODUCTION

According to Anderson & West the four-factor theory of climate for work group innovation, which underpins team climate, could provide a better basis for understanding both team climate and team innovation. The team climate and depicted Teams are also seen to be more reliable than individuals, as the impact of an individual leaving the organization is likely to be reduced when they leave a multi-skilled team than if they are an individual working on their own by (Anderson and West, 1994).Jonathan et.al cited

literature review which was carried out by Michael West, examining in considerable detail organizational climate, team effectiveness and innovation at work (see West, 1990; West & Anderson, 1996, for instance). From this research, four factors were identified as being central in determining effective team functioning and propensity to innovation: (1) Participative Safety; (2) Support for Innovation; (3) Team Vision; and (4) Task Orientation. West in order to find the range of work team innovation relies on the four factors of the Team Climate inventory namely Team Vision, Participative Safety, Task Orientation and Support for Innovation. The study shows that the ratings obtained from the predictors of Team Climate and Team Outcome Innovation processes were externally related to the measures of Team Innovativeness. Research observations also say that the Support for innovation module from the Team Climate Inventory (TCI) has been noted to be the most consistent module and all the four dimensions of TCI are all significantly correlated with the innovativeness.

RESEARCH GAPS

Yet, in spite of the extensive literature on the challenges of Overall there are only three empirical studies which used team climate inventory (TCI) in software development teams observed through literature review findings. They are Ganesh and Gupta (2006), Acuna, Gomez, and Juristo (2008) and Sudhakar, G.P (2012), (2016).

Ganesh and Gupta (2006) have investigated the effect of virtual-ness on team climate and the role of the extra-role performance of team members and moderating effects of task interdependence on this relationship. They have used team climate as the dependent variable. Acuna.T.S.et.al. (2008) examined the relationship between personality, team climate,

product quality and satisfaction in software development teams.

This study with focus on two research questions:

RQ1: how team climate for innovation impacts on team outcome through team functioning and team empowerment?

RQ2: How does team climate innovation perceives for team effectiveness and team outcomes?

OBJECTIVE, SIGNIFICANCE AND METHOD

The objective of this paper is to investigate project teams, their team climate innovation, team effectiveness, focusing on the ability to gain and team outcome. As part of this review-based study, the paper identifies and discusses the barriers, drivers and team task structures critical to sustaining high team commitment and team performance. The findings are integrated into a set of recommendations for effectively managing teams toward strong sustained commitment levels and high project performance. The significance of this study is in the area of project team effectiveness. The factors that influence the behavior and performance of the team toward the innovation, effectiveness and outcome plan and its objectives.

Scope of the study: This paper presents the initial results of a review-based study into the management

practices and business processes of private and public sector. Because of the multidimensional assortment of variables that define project performance and success, simple models are less likely to produce significant results, but one has to look beyond the obvious aspects of established theory and management practice. For this study, I have chosen to focus on four interrelated sets of variables: (i) team, (ii) team climate, (iii) team effectiveness and (iv) team outcome, which were suggested by other researchers previously as major influences to project success (Antoni ,2005; Verma 2012; Hackman, 2002; Thamhain, 2008).

Data measurements:

The unit of analysis used in this study is the project. The review-based study, conducted between 1982 and 2012, yielded sample data from 250 project team members with a total sample population of more than 500 professionals such as engineers, scientists, and technicians, plus their managers, including supervisors, project team leaders, product managers, directors of R&D, directors of marketing, and general management executives at the vice-presidential level. Several studies analyzed for the articles. Team innovation was measured by three items borrowed from Welbourne et al. (1998) with a seven-point scale ranging from one (needs much improvement) to seven (excellent).

Table Showing Respondents Regression analysis between the Variables of Team effectiveness. N=250respondents.

Table 1. Variables Entered/Removed			
Model	Variables Entered	Variables Removed	Method
1	Reward, Team Spirit, Customer Focus, Team Leadership, Collaborative, Purpose and Objective, Role Clarity, Development, Problem Solving, Relationship, Communication	.	Enter
a. Dependent Variable: TEAM EFFECTIVENESS			
b. All requested variables entered.			

This column confers about the method utilized was enter method which mean that each independent variable was entered in usual fashion. Several

regression analyses are performed to identify different Team effectiveness factors are the best predictors for overall team climate.

Table 2. Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.842 ^a	.708	.695	.29199
a. Predictors: (Constant), Reward, Team spirit, Customer focus, Team leadership, Collaborative, Purpose and objective, Role clarity, Development, Problems solving, Relationship, Communication				
b. Dependent Variable: TEAM EFFECTIVENESS				

For a linear regression, the best method to interpret the model is by looking at the value for R2. It is an overall measure on the strength of association and does not

reflect the extent to which any particular independent variable is associated with the dependent variable. Table 3.3.2. It illustrates the R2 value from the first

linear regression. The value of R² is 0.708, which means 70.8 % of the variance in Team effectiveness. Can be explained by variation in Reward, Team spirit, Customer focus, Team leadership, Collaborative, Purpose and objective, Role clarity, Development, Problem solving, Relationship, Communication. In

case of multiple regression, adjusted R- Squared attempts to yield a more realistic picture to fit of regression value to estimate the R squared for the population. The value of R- square is 0.70.8, while adjusted R- square is 0.695.

Table 3. ANOVA of Linear Regression 2.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49.233	11	4.476	52.496	.000 ^b
	Residual	20.291	238	.085		
	Total	69.524	249			

a. Dependent Variable: TEAM EFFECTIVENESS
 b. Predictors: (Constant), Reward, Team Spirit, Customer Focus, Team Leadership, Collaborative, Purpose and Objective, Role Clarity, Development, Problem-Solving, Relationship, Communication

Moreover, as shown in Table.3, the overall model to predict team climate is statistically significant (F value = 52.496, p =0.00). P value is less than 0.05. If smaller p value it means one can conclude that independent variable jointly explained variations in the dependent variables.

A high value of F means that there are more chance of the Null Hypothesis being rejected and alternate accepted, which means that X1 and X2 are different. Here it is 52.496, which means that the value is pretty high and that X1 and X2 will be different. On the other hand, the significant tells us the confidence level (1- Sig) of accepting the alternate hypothesis. Here the Sig is 0.00, which means that (1- 0.00 = 1) 100 % confident that the alternate hypothesis is accepted, and that X1 is not equal to X2.

Therefore, to check the significance level of independent variables to explain variation in dependent variable refer table .3 Looking at the predictors individually, the first variable(constant) represents the constant, also referred as Y intercept, the of the regression line when it crosses the Y axis. In the other words it means that this is predicted values of Team climate when all the variables are zero.

B –value: these are the values for the regression equation for predicting the dependent variable from the

independent variable. These are called as unstandardized coefficients because they are measured in their natural units.as such, the coefficient cannot be compared with one another to determine which 1 is more influential because they are measured on different scales.

$$Y_{\text{predicted}} = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \beta_5x_5 + \beta_1x_6 + \beta_2x_7 + \beta_3x_8 + \beta_4x_9 + \beta_5x_{10} + \beta_5x_{11}$$

$$Y_{\text{predicted}} = -.373 + .014X_1 + .018X_2 + .055X_3 + .027X_4 + .056X_5 + .041X_6 + .027X_7 + .21X_8 + .003X_9 + .049X_{10} + .053X_{11}$$

Table 4. Indicates that these values estimate describes about the relationship between the independent and dependent variables. These estimates derive about that 1 unit increased dependent value Team climate that would be predicted by 1 unit increase independent value will in Predictors. (Only those predictors are considered whose P-value are less than .05) Team Spirit is 0.014, Relationship is 0.018, Collaborative is 0.055, Purpose and Objective is 0.027, Communication is 0.056, Team Leadership is 0.041, Role Clarity is 0.027, Problem Solving is 0.021, Development is 0.003, Customer Focus is 0.049, Reward is 0.053.

Table 4 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.373	.208		-1.791	.075
	Team Spirit	.014	.014	.050	.979	.329
	Relationship	.018	.016	.057	1.074	.284
	Collaborative	.055	.017	.155	3.294	.001
	Purpose And Objective	.027	.016	.089	1.702	.090
	Communication	.056	.017	.199	3.334	.001
	Team Leadership	.041	.016	.125	2.600	.010
	Role Clarity	.027	.018	.083	1.463	.145

	Problem Solving	.021	.019	.058	1.099	.273
	Development	.003	.017	.010	.204	.838
	Customer Focus	.049	.016	.143	3.117	.002
	Reward	.053	.016	.156	3.295	.001
a. Dependent Variable: TEAMEFFECTIVENESS						

T and Significance: the column provides t- value and sig. 2 tailed p value used in testing the null hypothesis is rejected and alternate is accepted when p value is less than 0.05. they are statistically significant. In these case rest of the variables have p value less than 0.05 which is considered as statistically significant

RESULTS OF THE STUDY

Womack, Jones & Roos, 1991, in paper that particularly in the automobile industry the majority of managers seem to favor the position that restrictive team task structures with low decision latitudes and task demands are more effective than more complex team task structures, which allow more team autonomy and self-regulation. This stand is based on the Toyota production paradigm favoring restrictive types of teams. The socio-technical system theory (Emery & Thorsrud, 1982) and psychological theories of group effectiveness (Hackman, 1987) propose that complex team tasks stimulate task orientation and motivation, learning processes and effective task coordination strategies leading to increased team effectiveness.

Ganesh and Gupta (2006) in their study on Indian software development teams identified team climate as a crucial factor in determining the team performance. They reported that virtual characteristics of the software development negatively affected the team climate. Such degradation of team climate also affected the team performance negatively. This way the study contributed to draw attention towards drawbacks of virtual characteristic of software development teams.

As per Verma et.al (2012) Private sector executives had higher Team Empowerment (TE_m) and therefore they achieved higher Team Effectiveness (TE) as compared to public sector executives. While the executives in public sector inspite of having high TF factors like cohesion and confrontation could not outperform the Private sector executives. It is reflecting that better TE can be achieved through higher empowering factors like Task Clarity, Autonomy, Support and Accountability. But the TF factors are no less important for TE. According to

Pareek (2002), TE is the composition of both TF and TE_m. Thus, the manufacturing organizations of both the sectors are required to focus upon both the dimensions of TE. Public sector executives have better cohesion than Private sector executives. This can be attributed to the fact that Private sector lacks stability in jobs. The employees are more into frequent job changes and switch more often to other organizations. The ample opportunities lessen the tendency of maintaining with the group and during the phase of setbacks, the private sector executives prefer to leave their teams. Hence the Cohesiveness decreases.

Although, the score shows better TE as well as cohesion in large teams and better confrontation and collaboration in small teams. Thus, it can be said that inspite of major differences discussed above, both small and large Indian teams are equally functioning, empowered and effective. It might be because the respondents being from manufacturing industries had reflected more or less similar responses on the survey. Manufacturing organizations are production oriented and performance in such organizations is target oriented. Therefore, the functioning factors like cohesion, confrontation and collaboration are necessary to achieve desired performance levels. Similarly, measurable and tangible output of manufacturing industries stipulates the need of empowerment. Here, the empowering factors like task clarity, autonomy, support (in terms of resources) and accountability also bear tremendous weightage. All manufacturing organizations should better manage the empowerment factors in order to attain higher TE.

From study of Verma et.al (2012) First, stated that higher empowerment in teams leads to better TE. Second, the confrontation and collaboration should be focused to have better functioning teams and ultimately higher TE. Third, it is advisable to improve task clarity in large teams through the subdivision of overall targets into small sub targets. Fourth, the large teams can adopt empowerment as a tool to achieve better TE. Fifth, the public sector executives may increase their TE through enhanced autonomy and the private sector executives may also achieve higher TE

through increasing. Sixth, strategies may be designed to cover up the reported weak areas of each team. Seventh, the Practitioners and consultants may design and run training programs for improving TE based on the reference model of TE used in this study.

As per the author Antoni (2005) Correlation analysis shows that all analyzed outcomes are significantly related to team climate and all but irritability also to team task structure, with medium to high correlation coefficients. Team task structure and team climate are also highly correlated Mediators, which are highly correlated to the independent variable, reduce the power of the tests of the direct effect and the path from the mediator to the outcome variable, particularly for small samples (Kenny et al., 1998). The relation of team task structure and team climate for innovation was analyzed, showing, that team task structure significantly affects team climate for innovation. Self-regulated teams with complex team task structures had a more innovative team climate than restrictive teams. The effects of the supposed mediator on the outcomes controlling for team task structure are tested. The effect of team climate for innovation on innovative behavior is by far the strongest. Even irritability seems to be influenced by team climate for innovation.

With respect to the observed relationships between team task structure and innovative behavior, the supposed mediating role of team climate for innovation was supported. Team task structure had no direct effect on innovative behavior, if team climate for innovation was statistically controlled for. Regarding affective organizational commitment, job satisfaction and irritability the data indicate the assumed indirect effects of team task structure via team climate for innovation in the expected direction. This might be due to the small case numbers on team level and the high correlation of team task structure and team climate for innovation, reducing the effective sample size. (Antoni 2005).

As especially in highly standardized production processes innovative processes are of key importance for company productivity in the long term, creating complex and holistic team task structures, which support team innovation processes, can be regarded as an important investment for company success. The finding that teams with holistic team task structures have a more innovative team climate, corresponds with other results that development of innovative team climate can be supported by tasks with high innovation

requirements. The research findings about the study done on the determinants of team climate shows that the factor loadings pertaining to the Confirmatory Factor Analysis (CFA) using AMOS Graphics (SEM) has been proved to have a good impact and thereby it is to be implied that there prevails a conducive team climate in the organization which serves as a limelight for a best level of team climate variables with team outcomes among employees in the organization.

This study performed analysis of the team effectiveness (TE) in Indian Organizations on the dimensions of Team Functioning (TF) and Team Empowerment (TE_m) based on Pareek, (2002). In study that it could shed some light on the intervening processes between team task structure and team effectiveness, which had been neglected in most studies. The results observed support the assumption that complex and holistic team task structures support team innovation processes, which, in turn, promote team innovation and company effectiveness. These have important implications for HR practitioners who have a concern to establish or develop teams for negotiating employment agreements across a wide array of issues, authors by suggesting that the key personality factors associated with leadership are those associated with team-leadership. This is an important finding as it informs the team selection process for identifying team-leaders.

CONCLUSION

From above it can be concluded that highly standardized production processes innovative processes are of key importance for company productivity in the long term, creating complex and holistic team task structures, which support team innovation processes, can be regarded as an important investment for company success. The effect of team climate for innovation on innovative behavior is by far the strongest. Even irritability seems to be influenced by team climate for innovation. Manufacturing organizations are production oriented and performance in such organizations is target oriented. Therefore, the functioning factors like cohesion, confrontation and collaboration are necessary to achieve desired performance levels. Team-leaders have a critical role to play within teams, and it is essential that all stakeholders fully understand the relationship between the leader and relations in the team, if more positive

dynamics are to be sustained and negotiation effectiveness achieved.

The practical implications of this research are to design teams that facilitate knowledge sharing, they also observed that knowledge sharing is at its best level when the teams exhibit cohesive and innovative group behavior under existence of trust in work teams.

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