Formalization Structure and Team Creativity in High Tech Firms: The Mediating Role of Task Conflict

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Abstract

This research paper investigated the effect of the role of formalization structure on team creativity mediated by task conflict. The object of this research is high tech organizations in China, while the subject is 417 employees in 67 teams and 55 team leaders. Data was gathered through a questionnaire in two waves, first, through the employees' survey questionnaires administered to team members and three months later to team leaders. The measurements were assessed using the Exploratory Factor Analysis (EFA) in SPSS, and Confirmatory Factor Analysis (CFA) was conducted using AMOS version 23. A multiple linear regression model was fitted to the data to test how far structure affect team creativity using the SPSS 24.0 version. Findings indicated that formalization structure affects team creativity, and that task conflict mediated the relationship between formalization structure and team creativity. Thus, teams with formalization structure have moderate task conflict, which in turn contribution towards team creativity.

Keywords: Structure, Team creativity, Task conflict, High Tech Firms

JEL classification: M1,M12

Submitted: 7.06.2019

Accepted: 27.06.2019

Introduction

In today's competitive environment, creativity is a key success factor for nations and organizations. Organizations and nations, particularly high-tech companies, are increasingly supporting conditions that encourage creativity within the workplace. Teams have become a commonly used work format to enhance creativity. Thus, more attention needs to be given to the variables that affect team level creativity. Creativity is regarded as an influential force in developing nations' competitive advantages (Grant, 1991). It is argued that handling innovation elements is an essential component of a national innovation system (OECD, 2008). Governments can progress or weaken from the national advantages based on its governance of innovation system (Porter, 1992).

At an organization or micro level, studies have suggested that creativity and innovation are critical long-term contributors to the survival and success of organizations (Ghosh, 2015). Shalley & Perry-Smith, (2008) consider creativity as a starting point and the foundation of innovation. In the past, most studies on creativity focused on individual factors and ways of improving individual creativity (Liu & Lin, 2012), present studies also include organizational level factors (Bunderson & Boumgarden, 2010). In today's organizations, ' teams are a commonly used work format. It is generally agreed that the collective body of knowledge, experiences, perspectives, and ideas in the team is more extensive and richer than that of an individual employee (Boon, Vangrieken, & Dochy, 2016).

Existing research on team creativity effectiveness identifies the structure as an essential factor for team outcome and processes. The structure is about the specialization of tasks, hierarchical arrangements, formalization of procedures and objectives; it has an inherent impact on creativity. Simple logic suggests that one structure is associated with one desirable outcome; however, data does not rationally support this generalization that is often concluded, there is disentangle dynamism in the process of how structure influence creativity (Hollenbeck, Ellis, Humphrey, Garza, & Ilgen, 2011).

The classical interpretation of organizational theory believes that more structure is not suitable for creativity. On the other hand, recent work has revealed that structure can help with team learning and creativity (Bunderson and Boumgarden, 2010). The primary objective of the study was to find out the dynamic contextual process of how formalization structure influences the creativity of high-tech firms in China. Structure is increasingly playing an essential role in modern organizations, and longitudinal surveys of Fortune 1000 firms have indicated an ongoing rise in the use of team-based structures increasing from less than 20% in 1980, to roughly 50% in 1990, to over 80% in 2000 level (Hollenbeck et al., 2011). This has led to several research on teams, a considerable number of them focused on either the influence of various dimensions of team processes and outcomes (Ilgen, Hollenbeck, Johnson, & Jundt, 2005).

Another interesting factor task conflict; there has been an extensive discussion as to whether a conflict may be damaging or helpful for learning and creativity (De Dreu, 2006). Task conflict has been compared with relationship conflict, denoting interpersonal differences (De Dreu & Weingart, 2003; Rispens, Greer, & Jehn, 2007). Fundamental to these differences is the principle that various ideas and viewpoints created through task conflict will increase team performance, whereas interpersonal differences associated with relationship conflict are harmful (O'Neill, Allen, & Hastings, 2013). However, there has not been a clear picture between task conflict and team creativity (Giebels, de Reuver, Rispens, & Ufkes, 2016).

The organization of this study is as follows; the introduction in this first section discusses the primary importance of the study in today's organizations. In the second section below is the literature review; it reviews and explains the concepts used in the study, the theoretical relationship of the variables and hypothesis development. The methodology part is the third section, which discusses the procedures used in data collection, sample, and data analysis technique. Findings are in section four, describe in graphs and plot, the results using various indices. Discussion is presented in section five; it gives the interpretation of the findings, theoretical and managerial implication of the study. The conclusion is the last section; it shows the research findings, limitations and possible suggestions for further studies.

Literature Review

Team Creativity

In the past decades' creativity, various levels have been investigated including individual, team, and organizational level (Hennessey & Amabile, 2010). Creativity is a multifaceted and diffused concept that has been defined in numerous ways (Ghosh, 2015). There is an agreement in various studies that creativity denotes something that is both original and valuable (Ghosh, 2015). Thus, creativity is an essential component for innovation, with the distinction that innovation encompasses commercialization, and refers to the implementation of valuable, useful creative ideas (Schilling, 2010). Hence creative ideas offer a foundation for innovation development, but for innovation to be implemented with great success, it is essential to have a wide range of required resources. Therefore, creativity is associated with innovation, and is a key indicator of innovation, even though conceptually they seem to be different (Shalley & Perry-Smith, 2008).

Team creativity is defined as the generation of new ideas and valuable solutions that are based on collective efforts and a collaborative exchange of perspectives and information (Carmeli & Paulus, 2015). A team refers to a working group within an organization, with common goals (Paulus, 2000). (Chen & Chen, 2015) define teams as a group of individuals where 'talent, energy and skills are integrated into a team, and this collective capacity to innovate becomes greater than the sum of individual contributions' (p. 239).

A team consists of people who interact and work together toward a common goal/objective/mission (Misra, 2011). The goal of the team is to pool the resources/skills to improve productivity. Nowadays careers are becoming more interdependent; as a result, it is no longer likely for an individual to work individualistically or in isolation. Increasing changes in business situations demand continuous interaction with others because the work of one person is integrated with other people's work. Therefore, using the team-based structure to business acknowledge this by taking full advantage of the collective talent and dynamism of the people within an organization to accomplish the goals. Team creativity is the creation of valuable, useful new product, service, idea, procedure, or process by individuals working together in a complex social system (Misra, 2011).

Due to the interdependence of work in today's business environment, teams are a dominant means of getting work done. It is argued that the future success of many organizations depends on their ability to use the creative potential of their teams (Florida & Goodnight, 2005; Rego, Sousa, Pinaecunha, Correia, & Amaral, 2007).

Organizational Structure

Researchers agree that organizational structure, such as centralization and formalization, influence innovative behaviour (Rhee, Seog, Bozorov, & Dedahanov, 2017). A structure can typically be classified into three fundamental types: specialization, hierarchy, and formalization (Bunderson and Boumgarden 2010). Highly structured systems lean towards tall hierarchies, high levels of task specialization, and high degrees of formalization. As a theoretical construct, a structure is used for several types and sizes of entities at various levels of analysis (such as teams and organizational units).

Members of the team may have diverse ideas about what the individual should be doing based upon differences in their experiences, preferences, knowledge, and information. However, the most critical aspects to be determined within any team is where the final decision-making is going to reside, and structure plays an essential role in this case.

There has been limited research that has been conducted on the merits and liabilities of different team decision-making structures (Bonaccio & Dalal, 2006), and numerous formal theories have been developed that define when, where, and why different structures work better or poorly (Burns and Stalker, 1961; House, 1971; Pennings, 1992; Vroom & Yetton, 1973). These theories have highlighted that there is "no one best way" to structure decision-making, and they instead describe possibilities linked with why one structure is best compared to another based on the team's goals and strategy.

There are conceptual explanations and empirical data from several cross-sectional studies that indicate that each alternative has its own set of merits and obligations when used at both the organizational level and the team level (Hollenbeck et al., 2011). However, it is not always accurate to say that one structure is linked with one desirable outcome. Therefore, organization or workgroup cannot always change their structure if there was a corresponding change in goals or strategies because the cross-sectional and static set of theories and data on this topic does not reasonably concur with the dynamic generalization that is often concluded in both the conventional press and the academic literature. This study focuses mainly on the role of formalization structure within a team context.

Formalization

Formalization is the explicit articulation of objectives, priorities, and procedures. In formalization, rules define authority relations, roles, norms, communications, procedures, and sanctions in an organization (Rhee et al, 2017). Chen et al. (2010) claim that the complying with the rules and procedures may constrain the employees in combining various sources of knowledge for developing a new product or service. Low team formalization, in contrast, merely reflects the absence of rules and procedures regulating team member

behavior and thus if anything is only a “passive” influence on individuals. Teams that are high in formalization are characterized by clear behavioral protocols involving administrative checks (as evidenced by paperwork and administration) that regulate and direct employees' behavior. In less formalized team contexts, there will be fewer guidelines, more opportunities for discretion, and thus more leeway for task autonomy at the individual level. This is not to say, however, that the absence of formalized practices encourages creativity.

Teams with a little formalization of rules and procedures, provide an environment in which there is less enforced clarity as to desired ways to engage with the tasks. Whereas rules and procedures guide team creativity, teams low in formalization may increase uncertainty about the appropriate methods to engage with the task and heighten team conflict.

Task Conflict

Usually, task conflict has been compared with relationship conflict, which is about interpersonal conflict and personality differences (De Dreu & Weingart, 2003; Jehn, 1995; Jehn & Mannix, 2001; Rispens et al., 2007). Fundamental to this difference is the critical principle that the diverse ideas and understanding linked with task conflict could lead to increased team performance, while tensions and personality clashes associated with relationship conflict are harmful to the team (Jehn, 1995; O'Neill et al., 2013). This is often the case because the positive potential of task conflict depends mainly on the situations, such as the type of teams being studied, whether task conflict happens at the same time with relationship conflict, or what has been the specific criterion measure (De Wit et al., 2012). Another explanation given for the differences and advantages of task conflict states that the differences could also be because of the different methodology used, such as the method of analysis and the way the key (outcome) variables have been operationalized.

Importantly and closely related to this study is that the beneficial part of task conflict has been primarily found in the field of innovation and creativity (De Dreu & Nijstad, 2008). It has been observed that task conflict increases decision quality (De Wit et al., 2012), and innovative work behavior (De Dreu, 2006). Therefore, task conflict could benefit innovation (De Dreu, 2006), especially when it averts premature agreement and inspires critical thinking (Amason, 1996; Jehn, 1995; Pelled, Eisenhardt, & Xin, 1999; Tjosvold, 2008; Van de Vliert & De Dreu, 1994). Thus, there will be a positive association between task (but not relationship) conflict and innovative employee behavior.

Creative people are usually initiative in their approach to tasks (Fuller & Marler, 2009) and in most cases, will come up with task-related ideas, which are essential requirements for innovative behavior. In the process of idea generation, other team members could react negatively to the ideas, or they may also bring up similar proposals to improve the idea, sometimes they may aggressively differ with the suggestions (Westaby et al., 2014). In the situation, where these different opinions and discussion occurs, it provides essential information about, organizational challenges and more importantly enlightens the team members at large what others think of the idea; it will help to eliminate poor ideas, perfect potentially good ideas, and create more comprehensive support for ideas.

In literature about conflict, researchers agreed about the harmful impact of relationship conflict; however, studies have come up with findings that show negative, no relationship and sometimes positive relationships based on circumstances between task conflict and team creativity. Four meta-analytic studies have not been able to give a clear picture, particularly concerning task conflict (Giebels et al., 2016).

Hypothesis development

Structure and Team Creativity

The structure of a team is established mainly by the team, as it applies to that particular team, based primarily on the team's detailed task. Thus, the structure differs across various teams, even though the teams are found in the same organization because it is formed by the specific circumstances that a particular team encounters (Zellmer-Bruhn & Gibson, 2006). For instance, teams differ in specialization based on the degree of clear role expectations; in the hierarchy, also based on the degree of clear leadership; and in formalization, based on the degree of clearly understood objectives and priorities (Bunderson & Boumgarden 2010, and Marrone 2010).

Structured teams are characterized by clear leadership, clear role expectations and clearly understood objectives and priorities. This clarity is essential in helping team members to recognize who knows a particular subject matter as well as what they do not know and also determining who is accountable for what in the team. This known public knowledge amongst team members provides expectable outcomes and ensure trust, leading to a safer climate for team creativity. On the contrary, a team with less structure offers less expectable outcomes and behaviors. This will decrease interpersonal risk-taking, and psychological safety is not conducive to thrive. Bunderson & Boumgarden (2010) suggested that structure can lead to creativity by reducing conflict frequency and increased information sharing.

Clear expectations of roles and priorities, which are the hallmarks of structured teams assist team members in gaining access to information and expertise from others. Clear role expectations, objectives, and priorities provided by the structure is a way to creative activities, through reduced relationship conflict team members assume the risks of engaging in creativity.

At a glance, the influence of structure might be straightforward since it suppresses creativity, but at a closer look, the issue is more complicated. The structure can be characterized in terms of two core dimensions, highly structured and less structured, which has different influence on team creativity. This thus led to the following hypothesis;

H1: Structure has a positive relationship with team creativity.

H2: Moderately formalized structure has a positive relationship with team creativity compared to low levels of formalization.

The mediating role of Task Conflict

Well-structured teams have explicit role expectations and objectives; this will decrease conflict frequency regarding who is accountable for what and strengthens acceptable procedures and clearly define priorities for implementation of the task, this will make it easier for team members to monitor and deal with mistakes and oversights. Further, structured teams have some of the hierarchy in the form of an identified leader.

Studies have found that low task conflict "leads to inactivity and avoidance, neglect of information, and low joint performance," whereas on the other hand high conflict decreases the ability of team members to perceive, process, and evaluate information (De Dreu, 2006). Moderate task conflict helps teams by yielding differing opinions, solutions, motivations, and perspectives.

H3: Task conflict positively mediates the relationship between structure and team creativity.

H4: Moderate task conflict is positively related to team creativity than high levels of task conflict.

Research and Methodology

Sample and Procedures

This study aimed at establishing the effect of formalized structure on team creativity. The study utilized a dyadic research design and a Likert scale questionnaire for data collection. Data was collected from a sample of 933 team members within 224 teams and 170 team leaders in high tech companies around the Zhongguancun Science Park in Beijing, China. Proportionate stratified sampling was used so as ensure the sample was a representative of different sectors. To reduce the variance associated with the common method of data collection (CMV), two waves of data collection (X1 and X2,). All ethical research standards during data collection were observed.

Both team members and team leaders were explained the purpose of the study and how data collection procedure would occur. The first survey wave (X1) was carried out on the sampled team members to assess the level of formalization structure and task conflict.

The second wave (X2), was carried out after three months and focused the team leaders rating the team creativity. Most creativity studies rely on self-reported and reflective recollections by employees, which can lead to percept-percept bias, specifically when it is based on employees' self-response. To eliminate single-

source bias and to increase the criterion variable were assessed by the team leaders in this study. It was ensured that only team leaders whose members returned questionnaires in wave X1 participated in the study. Only 417 questionnaires were completed for wave one (X1) representing about 47% response rate. Fifty-five questionnaires were completed by the team leaders representing approximately 32% response rate from 67 teams from representing a 30% response rate by teams.

Measures

Various measures were used to measure the structure and team creativity within high-tech firms in China. The questionnaire was piloted amongst ten teams from eight different sectors (digital environment, industry, built environment, energy, natural science, and health science). This sample was to ascertain construct validity of the questionnaire were not included in the final analysis.

Structure

The structure was measured by the 17 -item scale used by Bunderson and Boumgarden (2010). The responses were made on a Likert scale ranging from 1(strongly disagree) to 7 (Strongly agree). The sample items included: for specialization, the items were "it is clear what each person in the team is supposed to do, team members are sure about what they are expected to do" (Gladstein 1984); for hierarchy the sample items were "The team leader makes sure that the team has clear, explicit expectations for its performance" (Edmondson 1996); for formalization items were; "It is clear to team members what work goals and objectives are most important, we have a good sense of the priorities of our goals" (Gladstein 1984), the team spends time making sure every team member understands the team objectives" (Hackman 1990). Minor adjustments were made to the scales in line with the objectives of the study.

Task Conflict

Using Jehn (1995) team conflict scale, the following sample items were used to measure task conflict; "how often do people in the team disagree about opinions regarding the work being done, how frequently are there conflicts about ideas in the team, how often does the team experience conflict about the work you do, to what extent are there differences of opinion in the team". Team members rated the extent of task conflict in the team using a seven-point Likert scale ranging from 1(strongly disagree) to 7 (strongly agree). Minor adjustments were made to the scales in line with the objectives of the study.

Team Creativity

Team creativity questions were based on Rego et al. (2007) scale the items included the following; "my team members suggest new ways to achieve goals or objectives, my team members come up with new and practical ideas to improve performance, my team members suggest new ways to increase quality, my team members promote and champion ideas to others, my team members exhibit creativity when given the opportunity to, my team members develop adequate plans and schedules for the implementation of new ideas, my team members have new and innovative ideas, my team members come up with creative solutions to problems". Team leaders judged the team creativity using a seven-point Likert scale ranging from 1(strongly disagree) to 7 (strongly agree). Minor adjustments were made to the scales in line with the objectives of the study.

Control variables

Team size was controlled because researchers have found that size influences team dynamics and performance (Duffy, Shaw, & Stark, 2000). Educational level, (Joshi & Roh, 2009; Price, Harrison, & Gavin, 2006), and tenure were also controlled. In addition, individual age, individual and team leader tenure were also controlled as each has been found to relate to the employee and team creativity (Tierney & Farmer, 2002) and to influence team processes (Hirst et al., 2009).

Data Analysis Technique

To determine the correlation relationship, a linear regression analysis was conducted, the study obtained linear regression results for each variable. Linear regression is an appropriate analysis when the goal of the

research is to assess the extent of a relationship between a dichotomous variable on an interval/ratio criterion variable. In this case, the predictor variable is the independent variable (structure), and the criterion variable is the dependent variable (creativity).

The model of data analysis in this research is as follows :

$$Y = a + b_1X_1 + b_2X_2e$$

Where :

Y = Variable of team creativity

a = Constanta

b1, b2 = Regression Coefficient

X1 = Variable of Formalization Structure

X2 = Variable of communication

e = Standard Error (error rate)

Result and Discussion

Preliminary Analysis

Normality

Normality of the variables was examined using the skewness and kurtosis. According to Kline (2017), the univariate normality of variables can be assumed if the skewness statistic is within the interval (-3.0, 3.0) and the kurtosis statistic lying in the interval (-10.0, 10.0).

Table 1: Normality Test

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Team Structure	.108	416	.227	.965	416	.125
Creativity	.045	416	.145	.995	416	.172
a. Lilliefors Significance Correction						

According to Table1 normality, the statistic of the Shapiro-Wilk test is 0.965, and 0.995 with a significance of 0.125 and 0.172 for team structure, and creativity, respectively. If the significance value of the Shapiro-Wilk Test is greater than 0.05 then the data is normal, if it is below 0.05, then the data is not normally distributed (Sekaran & Bougie, 2015; Saunders et al., 2017). Therefore, the results show that the data collected was normally distributed.

Linearity Assumption

Linearity assumes a straight-line relationship between the predictor variables and the criterion variable. Linearity was assessed by examination of scatter plots.

Figure 1: Normal P-P Plots

From the above figure, it can be seen that the points or data are unidirectional and follow the diagonal lines. From this, it can be concluded that the data is normally distributed.

Multicollinearity Test

Multicollinearity is a phenomenon in statistics where more than one predictor variables in a regression model have high correlations which according to Kothari (2004) it implies that one variable can be predicted linearly using the other variable with high levels of accuracy. The strong correlation between the predictor variables is not desirable because it increases error in the coefficients. Variance Inflation Factor (VIF) was applied in assessing multicollinearity in the model. The rule is that if the value of VIF exceeds 4 then there is need to conduct further investigation and if there are more than one variable that have a VIF value of about 5 or greater than 5 then one of the variables should be excluded from the model (Bryman & Cramer, 2016). From the VIF findings presented in Table2, the independent variables did not show any signs of multicollinearity because the VIF values were less than 5. It suggests that the results of the regression equation aren't misleading; this is because the predictor variables in the regression equations do not have high correlation values among themselves.

Table 2: Multicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Team Structure	.423	2.618

Assessment of measurement model

Using SPSS version 24, the research conducted a Cronbach alpha to measure internal consistency and Kaiser-Meyer-Olkin (KMO) to measure sampling adequacy for the construct in the model.

Exploratory Factor Analysis

To define the underlying structure of the data matrix Exploratory Factor Analysis (EFA) was used to identify the discrete dimensions of a set of items, and determining the extent to which each item was explained (Bryman & Cramer, 2005; Hair, et al., 2006; Pallant, 2007).

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.788
Bartlett's Test of Sphericity	Approx. Chi-Square	11407.171
	df	1711
	Sig.	.000

As presented in Table 3, the value of Kaiser-Meyer-Olkin (KMO) was 0.788, making it well above the minimum acceptable level of 0.60, confirming sampling adequacy (Tabachnick & Fidell, 2007). In addition,

the 417 cases in the data file were within the acceptable sample size of 100 for the EFA; it was higher than the minimum prerequisite of five times as many subjects as the variables to be analysed in the construct (Hair, et al., 2006).

Table 4: Rotated Component Matrix^a

	Component					
	1	2	3	4	5	6
Formalization5	.779					
Formalization6	.767					
Formalization7	.807					
Formalization8	.761					
Formalization9	.764					
Task Conflict1				.802		
Task Conflict2				.809		
Task Conflict3				.789		
Team Creativity1					.678	
Team Creativity3					.685	
Team Creativity4					.687	
Team Creativity6					.714	
Team Creativity7					.733	
Team Creativity8					.676	
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.						
a. Rotation converged in 3 iterations.						

From the Principal Component Analysis (PCA), out of the 11 items that measured structure, only 5 loaded above the cut off variance and were therefore included in the final analysis. Out of 7 items measuring task conflict, only three loaded above the cut off variance and were therefore included in the analysis. Of the 11 items measuring team creativity, 6 loaded well above 0.06 after varimax rotation and as such, they were included in the final analysis.

Reliability issues

The study computed reliability analysis to determine whether the questionnaire was reliable; Cronbach's Alpha was used. According to Gliem & Gliem, (2013) acceptable threshold value for alpha is 0.7 and above; this was therefore used as the study's benchmark. The results presented in Table 5.11 show that the Cronbach alpha value was 0.836, which is above the acceptable threshold value.

Table 5: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.836	.844	29

Validity issues

Reliability is essential but not a complete condition of validity of the measurement scales (Thompson, 2014). Therefore, before running the multiple regression analysis techniques to test the hypotheses, it is essential to determine appropriate (fit) of data for the hypothesized model.

Substantives validity was performed to establish the extent to which items measured the intended construct rather than other constructs (Holden & Jackson, 1979) The study utilised a substantive validity item-sort task

as proposed by Anderson and Gerbing (1991). All items that met the prerequisite for substantial validity were retained, and those that did not they were discarded. Thereafter, Confirmatory Factor Analysis (CFA) was conducted to determine convergent and construct validity of the variables. The model fit indices indicate an acceptable model fit ($\chi^2 = 431.5$, $p = 0.01$, Tucker-Lewis index (TLI) = 0.96, Comparative Fit Index (CFI) = 0.96, and Root Mean Square Error of Approximation (RMSEA) = 0.045). The standardised coefficients ranged between 0.70 to 0.93 and they all indicated statistical significance with a p value = 0.001. Furthermore, the results of the discriminant validity are depicted below in Table 6:

Table 6: Comparison of Model Fitness

Model	Modification	χ^2	df	χ^2/df	GFI	TLI	CFI	IFI	RMSEA
M0	Hypothesised Model	1159.7	153	3.49	.874	.837	.878	.874	.073
M1	M0 – Indicators	1017.3	173	2.67	.897	.893	.897	.895	.063
M2	M1 – Indicators	773.5	237	2.35	.914	.943	.907	.937	.052
M3	M2 + e27, e31, <--> e32	431.5	234	1.84	.924	.963	.969	.969	.045
Criteria				< 3	> .9	> .9	> .9	> .9	< .08

The hypothesis that test the independence of all variables to determine if they are uncorrelated was simply rejected with the following values $X^2 = 1159$; $df = 153$; $X^2/df = 3.49$. Thereafter the hypothesized model was tested and provided the following values; $X^2 = 431$; $df = 234$; $X^2/df = 1.84$ (<3.00) which support the hypothesized model. Furthermore, through the chi-square difference test between the independence model and the hypothesized model, there was an indication of significant improvement. The different indices value indicated a good fit of the model to the collected data.

Hypothesis Testing

The hypothetical model was used to test the hypothesis using SPSS version 24. The study predicted a positive relationship between structure and team creativity (H1), and a positive relationship between moderately formalized structure and team creativity (H2), a positive mediation by task conflict on the relationship between structure and team creativity (H3) and a positively relationship between a moderate task conflict and team creativity (H4). The results of the analysis are presented below;

Correlation Analysis

The study used Pearson's correlation to determine the extent to which the variables were linearly related (Hair, et al., 2016; Weinberg & Goldberg, 2009). The extent of linearity between two variables was indexed by the Pearson correlation coefficient (r) (Jaccard & Becker, 2017), which can assume any value from -1.00 to +1.00 inclusive. The size of the absolute value represents the strength of the relationship. A correlation coefficient of -1.00 or +1.00 and -0.50 or +0.50 shows a perfect and moderate correlation, respectively (Pallant, 2007). However, in social science research the significant correlation of 0.20 to 0.30 (and -0.20 to -0.30), are often considered necessary due to the complexity of studying the behavior of subjects (Jaccard & Becker, 1997). The variable that was identified to have a significant association with other variables was further analyzed through a stepwise regression process to determine whether those variables could explain it.

Table 7: Correlation

		Creativity	Team Structure
Creativity	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	416	
Team Structure	Pearson Correlation	.709	1
	Sig. (2-tailed)	.008	
	N	416	470

The findings established that there exists a strong positive correlation between structure and creativity ($r = 0.709$, $p = 0.008 < 0.01$). This implies that team structure affects creativity at the team level in high tech firms in China.

Multiple Linear Regression Analysis

The study conducted a regression analysis to investigate the association between the response and the predictor variables. The study made use of R^2 (coefficient of determination) and F test. R^2 was applied in measuring the proportion of variation in the response variable as a result of a change in the predictor variable. F-test was applied in determining how fit the model was and aided in determining whether to accept or reject it. The significance level of the model was assessed by comparing the F-value with the general level of significance and p-value.

Team Structure and Creativity

The study sought to establish how and why specific factors affect the relationship between team structure and creativity within high tech organizations at the team level. The study conducted a regression analysis between team structure and creativity. The study computed the coefficient of determination, which was used to show the variability of team creativity as a result of a change in the team structure. The study also computed ANOVA, which was used in explaining the significance of the model and coefficients were applied in testing the study's hypothesis. Below is the table of the results of the processed

Table 8: Regression Analysis for Team Structure and Team Creativity

Model		R	R Square	Adjusted R Square	Std. Error of the Estimate		
1		.571 ^a	.326	.301	0.43946		
a. Predictors: (Constant), Team structure							
ANOVA ^a							
Model		Sum of Squares		df	Mean Square	F	Sig.
1	Regression	188.192		1	188.192	32.783	.001 ^b
	Residual	2382.315		415	5.741		
	Total	2570.507		416			
a. Dependent Variable: Team Creativity							
b. Predictors: (Constant), Team structure							
Coefficients ^a							
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta			
1	(Constant)	2.387	0.561		4.255	0.019	
	Team Structure	0.286	0.064	0.271	4.469	0.001	
a. Dependent Variable: Team Creativity							

The R^2 value for the relationship between team structure and team creativity was found to be 0.301. This suggests that there was 30.1% change in team creativity in high tech firms in China, due to changes in the team structure. Therefore, other factors not studied in this study contributed to 69.9% variation of team creativity. The study also conducted ANOVA to test the reliability of the regression model. The study found a significance value of 0.001, which was less than 0.05 at 95% confidence interval. The F value was 32.783,

which was significant, as shown by the p-value of 0.001. This implies that the model was reliable in predicting team creativity in high tech firms in China.

From the coefficients, the regression model obtained was $Y = 2.389 + 0.286X + \varepsilon$; Where Y is team creativity and X is structure. This is an indication that a unit improvement in structure results in an increase in team creativity in high tech firms in China by 0.286 units.

Mediation analysis

The second specific objective of the study was to highlight the mediating role of task conflict on the relationship between formalized structure and team creativity.

Table 9: Regression of team creativity and Structure Mediated by Task Conflict

Model		R	R ²	Adjusted R ²	Std. Error of the Estimate	
1		.571 ^a	.326	.301	.43946	
2		.620 ^b	.384	.375	.46676	
a. Predictors: (Constant), Formalized Structure						
b. Predictors: (Constant), Formalized Structure, Task Conflict						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	188.192	1	188.192	32.783	.001 ^b
	Residual	382.315	415	5.741		
	Total	570.507	416			
2	Regression	4.581	2	1.527	7.009	.000 ^c
	Residual	89.977	414	.218		
	Total	94.558	416			
a. Dependent Variable: Team Creativity						
b. Predictors: (Constant), Formalized Structure						
c. Predictors: (Constant), Formalized Structure, Task Conflict						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.387	0.561		4.255	0.019
	Structure	0.286	0.064	0.271	4.469	0.001
2	(Constant)	4.403	0.353		12.473	0.000
	Structure	0.049	0.013	0.007	3.769	0.029
	Task Conflict	0.111	0.031	0.176	3.581	0.001
a. Dependent Variable: Team Creativity						

The value of R² that was found when the structure was regressed with team creativity was 0.326. Upon introduction of task conflict as a mediating factor, the value of R² increased to 0.384. The findings reveal that when task conflict is introduced as mediating effects, 38.4% variation in team creativity in high tech firms in China could be attributed to structure and task conflict. Therefore, task conflict is an excellent mediator for the relationship between team creativity and team structure.

From ANOVA analysis, the significance level for the two models was 0.001 and 0.000, which are less than the selected significance level of 0.05. The F values were 32.783 and 7.009, which were significant. Therefore, the models were considered suitable for predicting team creativity in high tech firms in China.

Discussion

The study found that the structure was reliable in predicting team creativity. These agree with Rhee, Seog, Bozorov & Dedahanov (2017) that organizational structure, such as centralization and formalization,

influence innovative behavior. The teams that were found to have more structured systems were found to have high formalization levels. This was demonstrated by respondents indicating that their teams have very clear priorities which guide them in doing their work.

Team members always differ in terms of their experience, skills, knowledge and preference and this results to the different ideas they have. This is important because it creates variation, and each team member can be assigned a role that matches their personality. On the other hand, the challenge arises with determining who will be assigned what tasks; this is where structure plays a crucial role. The study established that formalized structured teams didn't have such a challenge because each team member had their particular priorities and had a clear leader who directs them on what to do.

Those teams that were moderately structured followed well-developed work schedule that guided them towards achieving the goals of their team. Because the structure was efficient and allowed team leaders to communicate goals and priorities are clear, team members were able to adhere to the set standards and specifications and re-use already existing procedures.

The study further established that team members strictly implement work procedures extensively employs standards and continually look for more efficient ways to accomplish their assigned tasks. From Rhee et al, (2017) definition of formalization structure of an organization, it is evident that most of the teams that were studied used this form of the structure because of their exclusive articulation of objectives, priorities, and procedures.

Teams with strict rules and procedures regulate and direct employees' behavior guiding team creativity, teams low in formalization may increase uncertainty about the appropriate ways to engage with the task and heighten team conflict. The findings also established that improving team structure will lead to an increase in the creativity of teams. Therefore, if the appropriate structure is established and implemented then the team will have a favorable environment encouraging their creativity.

The study found that task conflict was an appropriate mediator in improving the relationship between team structure and creativity. Task conflict significantly and positively mediated the relationship between team structure and team creativity. These agree with Van de Vliert and De Dreu, (1994) that there is a positive relationship between task conflict and innovative employee behavior. Task conflict as a constructive side of conflict compared to relationship conflict has been found in the field of innovation and creativity. Therefore, task conflict is beneficial for innovation, when it averts premature consensus and promote critical thinking; thus, is a positive association between task conflict and team creativity.

Implications of the Study

The study found that structure has a positive relationship with team creativity. The study also found that the relationship between the formalized structure and creativity was significant. The study, therefore, concludes that an improvement in structure will lead to an increase in team creativity. Regarding the mediating effect of task conflict, the study found that task conflict positively and significantly mediates the relationship between structure and team creativity. The study, therefore, concludes that task conflict is a suitable mediator for the relationship between structure and team creativity.

Most studies in the field of structure and creativity have focused on the negative impact of the structure on team creativity; this study has found that structure, particularly formalization, can be used to contribute to team creativity. There are currently inconclusive findings on the relationship between structure and creativity; therefore, this study contributes towards theory in the field of structure and creativity. More importantly, the study contributes by suggesting the mediating role of task conflict in the relationship between structure and team creativity. The study, therefore, has important implications for managers or team leaders to positively use moderate formalization structure to provide priorities and reduce the high level of conflict, and through this promote team creativity. The findings regarding task conflict provide practical implications for team members to share their different viewpoints and also critic others views within the team to avoid poor decisions in teams which will not produce innovative ideas and products.

In the organizational context, organizations should structure their teams at a most appropriate level to allow them to be more creative. Different types and level of structures have different results on different teams, and it's, therefore, essential for the organization to establish and implement the most suitable structure to promote team creativity.

Conclusions

This research concludes that structure has a significant positive influence on team creativity. The study, therefore, recommends that organizations should use moderate formalization structure to contribute to more team creative. Formalization is the explicit articulation of objectives, priorities, and procedures which reduce uncertainty in a team and create a conducive environment for team trust and creativity.

The study also established that task conflict positively mediates the relationship between team creativity and structure. The study recommends team leaders to encourage their team members to share their ideas and critic the ideas of others; this will lead to a constructive conflict which prevents premature consensus and stimulates critical thinking. Debates among team members will also provide proactive team members with ideas pertaining organizational constraints and inform them of the views of their team members and therefore eliminate poor ideas, modify the good ideas and generate more comprehensive support for ideas.

The general objective of the study was to analyze the contextual relationship between team structure on creativity in high tech firms in China. The study mainly focused on companies in China; the study recommends replication of the study in tech companies in other countries to facilitate comparison of the research findings. The study recommends replication of the study in different sectors like banking and manufacturing industries. Furthermore, the study recommends the use of longitudinal study in future research.

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