THE IMPACT OF PERFORMANCE CLIMATE AND MASTERY CLIMATE ON PROJECT TEAM COLLABORATION WITH MEDIATING ROLE OF PROSOCIAL MOTIVATION

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Abstract

From the many past years, project work within team has become the common place in the firm and organization. Different research indicated that motivation climates such as performance climate and mastery climate in which project teams are operating would be highly relevant to determine the behavior of employees. The current study examines and investigates the impact of Performance Climate "PC" and Mastery Climate "MC" on Project Team Collaboration "PTC" with the mediating role of Prosocial Motivation "PM". Project Team Collaboration plays significant role in the success of the project and organization and that is highly and significantly influenced by PC and MC and both of them combined together to improve project team collaboration with the contribution of prosocial behaviors. The primary research methodology is used for research in which survey of 194 individual from the IT sectors firms of Pakistan are performed to collect the data. Research approach used is deductive research and quantitative data is collected for the research. The tool to perform the analysis in the research is Smart PLS 3.3. The research findings demonstrated that there is mediating impact of prosocial motivation between the independent variable (PC and MC) and dependent variable (PTC). All research hypotheses are accepted and supported and indicate that both climate factors have a positive and strong influence on the project team collaboration.

Keywords: Project Team Collaboration, Performance Climate, Mastery Climate, Prosocial Motivation.

Introduction

There are several consensuses among practitioners and scholars which show team collaboration generates positive outcomes for the project and any task, more specifically in the creative and productive projects. The current research investigates motivational climate such as mastery climate and performance climate effects. Those are defined by goal-setting theory on the project team collaboration. Past studies identified different causes of project failure and one key obstacle identified in them that causes projects is disputes or conflicts between teams and employees. According to (Darisipudi, 2008), effective team communication and collaboration is the key to success factors in the project. Collaboration is strongly linked with and influenced by the performance of the project team. At the workplace, collaboration is characterized as existing authority that is shared among individuals. That can be performed to make contacts such as direct or free, resolve disputes and conflicts and, support experimentation and creativity.

(Devi et al.2017), stated collaboration as an organization-focused plan and informal collaboration would be considered ingredients for innovation and change. While collaboration impact working relationships of individual and group performance is not documented properly. In projects that include complex and

dynamic infrastructure, coordination position is delegated, and execution performed by the project team cause complexities.

Project Team collaboration and organizational task management are always be given top priority by the professional team. According to (Heggebo et al. 2021), project collaboration and communication describe and illustrates organizational aim and strategy. That bring every team member, staff, or employee under the same umbrella to meet common goal along with working together to complete the task assigned (Thamhain, 2013). Collaboration between project teams and operation activities management in the team would be given extra priority in the organization (Zwikael, 2019),(Ohlert & Zepp,2016) stated that mission and philosophy of the organization for the project cooperation are to tie everyone together who are working on the project and meet the shared goal of an organization. The current research defines motivational climates under which teams efficiently and effectively operate in the project and enable an organization to determine and control their employee, staff, and team member's behavior.

(Edge,2015), defines, that modern organization mainly rely on their employee's collective experience, professional skills, and knowledge at the individual or team level. This enables managers and top management to develop understanding to enhance and improve team collaboration by proposing new strategies and putting collective effort to meet organization goals and objectives. (Buch et al. 2015), completing a project successfully and in a professional way required skills and experience, and team members and employees only contribute that.

The research's main purpose is to examine the relationship of climate factors and PTC with mediating role of PM For the research data is collected using the questionnaire survey. To completed the survey, 250 questionnaires are distributed 202 responses are returned and from them, 194 are used for the analysis of research. Statistical analysis in research defines the scale consistency used for the model variables.

Literature Review

In this section, existing research on the Project Team Collaboration will be discussed which will support our study. The variables of the current research are also discussed which are used in the study. In current research performance, climate and master climate are independent variables and their impact would be determined upon the project team collaboration, which is the dependent variable. In the research, prosocial motivation plays mediating role between performance climate, mastery climate, and project team collaboration.

According to (Caniels et al. 2019), the variable relationship is developed and their impact on each other is assessed considering the theoretical analysis. (Ohlert,2016) stated that relationships along with their impact assist to develop the hypothesis for research. Based on the research hypothesis, a logical model comprised of a variable is developed that enable to development of understanding and the main concept of the research (Akanbi, 2015). To make things more clear for the research, given below are the variable definition in terms of research are discussed.

The importance and implementation of projects in the industry are growing because it is an appropriate and effective way to bring transformation to the workplace environment, but it does not always deliver the expected performance (Mergel, 2019). Due to its growing sophistication, projects require teammates with understanding, abilities, and interpersonal interactions to obtain the expected project performance (Kessler, G. 2018). In terms of projects, motivation is significant in deciding groundbreaking things by teams, which comes from the workplace (Richards et al., 2018). The situational surrounding in which the project operates influences the team to structure their behavior, and motivational climate is one to predict performance, inventiveness, and turnover intentions (Amin et al. 2020).

Hypothesis Development

Many studies have been done on team cooperation during project performance in the past, but the motivating environment aspect has been disregarded (Shin, 2018). Plans, rules, and regulations, as well as work accomplished, all contribute to the development of a motivating atmosphere (Tien, 2019). A motivating atmosphere shows the achievement of goals about the setting in which the project takes place. The motivating atmosphere is divided into two categories: performance and mastery (Abdullah, 2014). Helping others, team effort, teamwork, and team or individual development are all aspects of the mastery climate (Kipp, 2020). Climate team members focus on their performance, skills, capabilities, and project results, and they generate competition among themselves because they want to be rewarded for the greatest performance by establishing distinction (Nested & Richardson, 2018),(Carnevale et al.2019) defined that the key distinction for the mastery climate is that team members are required to focus on generating criteria reference. However, within the performance climate, an individual is required to construct other standards or points of reference i.e., act as superior in front of others that mainly foster the diverse nature atmosphere in the project environment.

Performance Climate and Prosocial Motivation as Mediator

According to (Parisi et al.2005), Prosocial Motivated employees or project team members concentrated on the performance of the team instead of focusing on self-performance. However, performance climate would be linked with the self-centered accomplishment-oriented individual who cannot want to collaborate effectively in the teams (Johnson, 2020). Team members who are prosocial motivated can use their efforts to attain and achieve team benefits and in a performance-dominated climate, they may invoke their social networks effectively. Additionally, they can also be concentrated on the task which has potential benefits in a team (Caniels, 2019). Moreover, prosocial motivation would be expected to alleviate the negative and possible behaviors, which may occur in the climate i.e. performance-dominated, and thereby buffer the poor and negative relationship between project team collaboration and performance-dominated culture.

H1: Performance climate significantly and positively develops relationships with prosocial motivation.

H2: Performance climate positively develop the relationship with the Project team collaboration

Mastery Climate and Prosocial Motivation as Mediator

As per (Thamhim,2013), opinion, mastery climate would be predominantly perceived by the employees. In essence, this may follow the different arguments of the employee's prior level of the studies which indicates and focus on development and learning that further beneficial for the outcomes of organization and individual outcomes (Grant, 2009). The study also suggests that adaptive learnings and behavior are promoted by the mastery climate within the individuals. The research focus is predominantly on the behavioral impact instead of the performance indicators and the suggestion made is about the mastery climate, which is considered more than the performance climate (Srivastava, 2020). In the research concept that is same like mastery climate is adopted referred to as psychological safety climate which is about to share the belief that is held by individual or team and considered safe for the idea sharing, problem discussion and exchanging experience including which are negative (Chiocchio, 2012), (Crespo,2019), in study indicates that the mastery climate and reflexivity can be positively demonstrated by the project team collaboration. Moreover, employees' voices refer to the behavior, which is linked with the mastery climate.

H3: Mastery climate significantly and positively develops a relationship with prosocial motivation.

H4: Mastery Climate positive develops a positive relationship with project team collaboration.

Prosocial Motivation and Project Team Collaboration

As from the studies, prosocial motivation would be conceived as the mediating factor between the relationship of motivational climates and project team collaboration (Canials, 2019). In addition, it is expected that when the prosocial motivation is high then it can strengthen the relationship between motivation climates and project team collaboration.

Prosocial motivation mainly encourages employees to identify all perspectives about that which things are helpful for the team (Crespo, 2019). Employees who are prosocial motivated can consider other team members' perspectives and their actions would be adapted accordingly (Ashraf, 2019). In the context of project team collaboration, an employee who is prosocial motivated also encourages and empowers work forms that are beneficial for the individuals and whole teams (Sedam, 2015). This further enables employees to change the existing balance among the motivation climate towards producing forms of teamwork, which is helpful for the team members i.e. strengthening the relationship between project team collaboration and motivational climates.

The team is regarded as the backbone of any project, and it is highly frequent in most businesses, particularly project-based organizations, which require a skilled team to obtain the best results (Rajhans, 2018). Collaboration among team members aids in the acquisition of new abilities and the enhancement of teamwork. The built-in notion of cooperation is that it will improve the firm's overall performance while lowering the other costs related to the project (Braglia, 2014). Collaboration happens when a person is unable to finish a job and assists others in maximizing the use of resources and talents to lessen risk effects (Huxham & Vangen, 2013). Collaboration is defined as the process by which team members plan, support, monitor, motivate, negotiate, and influence one another to work collaboratively toward a common goal (Yasrebi, 2020).

According to the study, team cooperation is an efficient means for information to be passed between team members, and engagement minimizes a person's workload (Ashraf, 2020). When projects focus on team collaboration rather than competition among project team members, they will function successfully, obtain a competitive advantage in the form of enhanced project performance, and have a beneficial impact (Dyer & Singh, 2018). As a result, research offers the foundation for a link between team cooperation and project performance (Um & Kim, 2018).

When there is a difference of opinion or a conflicting circumstance, coordinated and strategic decisionmaking is critical for the project's success as this will address the difficulties and result in new idea generators taking advantage of the chances (Galli, 2018).

Collaboration requires team members to participate (Amin, 2020). In projects, team members rely on one another to complete tasks; they hold discussions, share knowledge, and analyze data; this collective work leads to team collaboration this task dependence of team members necessitates the support of the project leader and others involved in the project, which is provided in Mastery climate (Harwood et al., 2015) Because the activities are directly or indirectly linked with each other, and the environment is a crucial influencing element for team performance (Cortellazzo, 2019), cooperation in making decisions for tasks is necessary. Team members must participate to increase team performance, and as a result, project performance improves.

H5a: Relationship is mediated by prosocial motivation between team collaboration and performance climate in a way that if prosocial motivation is high then the relationship is stronger

H5b: Relationship is mediated by prosocial motivation between team collaboration and mastery climate in a way that if prosocial motivation is high then the relationship is stronger



Figure 1: Research Model

Researh Methodology

Sampling and data collection

A sample would be referred to as a larger population component and it is comprised of the process that used the large portion of the population to conclude about the whole population defined for the research. (Nayak et al.2021) stated that mostly during the research it is observed in some of the countries, which are under privilege the response rate, are low relative. So, to meet the need for statistical analysis, hypothesis testing is performed for the 202 survey responses collected.

For the data collection, a survey-based approach is utilized in the research. Total 250, questionnaires are circulated and from them, only 202 responses are returned successfully. From the 202 responses, 8 of them are not completed properly and a few of them would be marked as doubled. Hence, those 8 responses are not used during the data analysis. So, 194 responses are used in the research for statistical data analysis.

The sample size would be verified using the Sekaran and Bougie Calculator. We have total of 202 responses in which sample size of 194 responses. In the current research, convenient sampling is adapted to collect the data from the representatives using non-probability sampling. However, this approach is preferred and followed because it not just eliminate the overall biasness in the data collection process but also covers the population in a wide range.

For the Data Collection, a questionnaire is used and a statistical technique (SEM or Structural Equation Modelling) is applied to perform analysis using the statistical software SmartPLS 3.3.3. Quantitative data is collected during the research and SEM shows a casual relationship between variables.

In the research, demographics have no such strong influence but reporting the demographic analysis comprehensively provides the participant's assessment in terms of males and females participating in the activities of the firms within developing countries compared with the countries, which are developed. The large population of respondents in the surveys is males, which are 90.20% and 9.80% of females, participate in the survey. Out of the 194 respondents, 105 are males and 85 are females are filled the survey during the process of data collection for the research. Participants according to the age group includes: 2.06% lie in the category of age less than 25, 15.46% lie between the age of 26 to 30, 25.77% lie between the age of 31 to 35, 46.39% lie between the age of 36 to 40, 4.63% lie between age of 41 to 45, 3.60% lie between age 46 to 50 and 2.60% has 50+ age.

For the education, 6.70% of participants completed intermediate degree, 51.54% completed Bachelors, 26.28% completed masters or MCS (14 years education), 14.43% completed MS/MPhil, and 1.03% completed Ph.D. In terms of the department, 24.22% participants are working in HR dept, 26.28% are working in operations and development departments, 22.16% working in the marketing department, 15.46% are working in management dept and rest 27.31% are working in different dept. like Accounting and Finance, etc.

Demographics features		Frequency	Percentage
Gender			
	Male	175	90.20
	Female	19	9.80
Age			
	Less than 25	4	2.06
	26-30	30	15.46
	31-35	50	25.77
	36-40	90	46.39
	41-45	9	4.63
	46-50	7	3.60
	Above 50	4	2.06
Education			
	Intermediate	13	6.70
	Bachelors	100	51.54
	Masters	51	26.28
	MS/MPhil	28	14.43
	PhD	2	1.03
Department			
	Human Resources	47	24.22
	Operations and Development	51	26.28
	Marketing	43	22.16
	Management Other	30 23	15.46 27.31

Table 1: Demographic Analysis

The stats above discussed illustrated the respondent and participants' diversity against the questionnaire with a different group of age, academic background, departments they are working and most of the respondents are young.

Data Analysis And Results

This chapter of the research defines and provides an analysis overview, descriptive statistics, and testing of hypothesis. For the research, data is collected using online surveys. Total 250 of the questionnaires are distributed to collect and obtain data in precise form. The medium used to distribute questionnaires are Email, LinkedIn, and Email, and individuals are requested to spare their time and fill out the questionnaire form. From the survey, 202 responses are generated and returned and from them, 08 of the questionnaires are not answered completely or some of them are double-marked and even 2 of them are not left unanswered. Hence, during the research, the data of those 8 respondents are not considered during the analysis. So, for the final research 194, samples are considered valid to perform the statistical analysis.

To test the research hypothesis, Smart PLS 3.3.3 software is used. SMART PLS is mostly used to perform the statistical analysis of data. This software is highly recommended by the researcher for the small data set. Using the software, first, a reflective test would be applied to identify the instrument's validity and reliability. Secondly, the formative analysis is performed on the software to accomplish the multicollinearity, and correlation between the variables is checked along with analysis technique is applied for hypothesis testing. Two models for the measurement are developed in SEM in which first is model measurement and the second one is the structural model that is considered to test the hypothetical relationship based on the analysis of path.

Results

This is the analysis in the research that assist to determines constructing relationship which is stated by the research hypothesis. There are several tests available to determine the variable relationships. To serve this purpose, three tests are implemented and taken into consideration and those include Effect Size, Coefficient of Determination, and Path Coe-efficient for Structural Model Assessment. At first, data is executed via PLS algorithm for path co-efficient generation to indicated positive/negative relationships between variables. Secondly, bootstrapping is performed on SMART PLS with a sample size of "500" which is a greater value as compared to the actual sample. In this way, satisfying criteria are proposed by Deng et al. (2018).

With the bootstrapping, t-value and p-value of all relationships are identified that enable researchers to determine whether the hypothesis is accepted or rejected. Hypotheses are acceptable if the p-value < 0.05 and t-value > 1.96.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
PC -> PM	0.368	0.375	0.081	4.525	0.000
PC -> PTC	0.397	0.391	0.084	4.524	0.000
$MC \rightarrow PM$	0.433	0.428	0.077	5.617	0.000
MC -> PTC	0.324	0.325	0.071	4.740	0.000
PC -> PM -> PTC	0.119	0.122	0.037	3.199	0.000
MC -> PM ->	0.141	0.140	0.043	3.278	0.000
PTC					

Table 2: Interpretation of the Path Analysis Result

Interpretation of the Path Analysis Result

In the table above, Hypothesis results are illustrated and provided. Hence, six hypothesis H1, H2, H3, H4, H5a and H5b, stated that Performance Climate has a positive influence over the Prosocial Motivation as (t=5.617, p=0.000 β = 0.368). The results indicated that the first hypothesis is accepted and a strong association is determined between Performance Climate and Prosocial Motivation.

The second hypothesis stated that performance climate has direct and positive relationship with project team collaboration as (t= 4.524, p= 0.000 β = 0.397). The results indicated that the third hypothesis is accepted and a strong association is determined between Performance Climate and Project Team Collaboration.

The third hypothesis stated that Mastery Climate has a positive influence over the Prosocial Motivation as (t= 5.617, p= 0.000 β = 0.433). The results indicated that the first hypothesis is accepted and a strong association is determined between Mastery Climate and Prosocial Motivation.

The fourth hypothesis stated that mastery climate has direct and positive relationship with project team collaboration as (t= 0.470, p= 0.000 β = 0.324). The results indicated that the fourth hypothesis is accepted and a strong and direct association is determined between Mastery Climate and Project Team Collaboration.

The fifth hypothesis stated that Performance Climate has a positive influence over the Project Team Collaboration with the mediating role of Prosocial motivation (t=3.278 p= 0.000 β = 0.119. The results indicated that the first hypothesis is accepted and a strong association is determined between PC and PTC.

The sixth hypothesis stated that MC has a positive influence over the PTC with the mediating role of PM (t= 3.287, p= 0.000 β = 0.141). The results indicated that the first hypothesis is accepted and a strong association is determined between MC and PTC and PM mediates their relationship.

Reliability Analysis

Two tests and experiments are piloted to identify the reliability of the data collected. The first test identifies the composite reliability of the data and the second test is applied for calculating the reliability of Cronbach's Alpha (Bairgi, 2019). The interpretation of the results from data analysis defines the instrument construct all values greater than 0.7 and that value demonstrates the high reliability and consistency level. (Mueller et al.2019), stated that when the instrument reliability value is greater than 0.6 then that is considered acceptable and reliable. The reliability analysis would be given below.

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
MC	0.827	0.867	0.867
PC	0.861	0.891	0.891
PM	0.819	0.873	0.873
РТС	0.931	0.941	0.941

Table 3: Reliability Analysis

Table depicts the variables reliability and that demonstrates the satisfactory results are achieved for a metric named "Cronbach Alpha". Table 1 demonstrated each variable has good reliability and they are consistent

with the research on the topic. Cronbach Alpha (α) value for the Performance Climate is "0.861", Master climate α value is "0.827", Prosocial Motivation α value is "0.819", Project Team Collaboration α value is "0.931". The 0.7 is considered a satisfactory value and benchmark for the data consistency and reliability. The figures mentioned in the table demonstrated that all items are reliable to the concerned variable measures.

Convergent Validity

For the data analysis, convergent validity is referred to as an ability that computes the construct using the methods of measurement which are self-determined and those demonstrate the measure's high correlation. Convergent validity new scale relates that how closely variables are linked to each other including different aspects of similar construct. This allows a researcher to track the average variance which is measured by constructs results from the variance error in the measurement. The AVE "Average Variance Extracted" was used to determine convergent validity. A value of AVE > 0.5 would be acceptable because this supports the data validity. The AVE of the data is given below:

	Average Variance Extracted (AVE)
MC	0.867
PC	0.891
PM	0.873
PTC	0.941

Table 1: Convergent Validity

As in the above table, for each variable AVE > 0.5 indicated the validity of data.

4.6. Discriminant Validity

This test involves determining and representing low correlation among the constructs. Discriminant validity identifies the difference between the variables. Three types of tests are used for regulating discriminant validity i.e., Cross-Loading, HTMT Ratio, and Fornell-Larcker Criterion.

Fornell-Larcker Criterion Test

This test is mostly used to regulate the variance of a variable by measuring the square root of AVE. Given below are the results of this test.

	MC	PC	PM	PTC
MC	0.724			
PC	0.741	0.742		
PM	0.706	0.689	0.761	
PTC	0.742	0.424	0.621	0.785

Table 5: Fornell-Larcker Criterion Test

From the table above, values in diagonal demonstrated are discriminant validity. AVE-square root must be greater than the correlation of construct. From the table, it is shown that each variable has itself greater value as compared to the other.

	МС	PC	PM	РТС
MC1	0.777	0.741	0.574	0.431
MC2	0.709	0.485	0.485	0.765
MC3	0.813	0.780	0.581	0.441
MC4	0.696	0.588	0.485	0.469
MC5	0.575	0.527	0.452	0.438
MC6	0.751	0.380	0.549	0.873
PC1	0.427	0.784	0.469	0.772
PC2	0.502	0.740	0.485	0.421
PC3	0.433	0.671	0.479	0.691
PC4	0.451	0.635	0.358	0.610
PC5	0.484	0.618	0.402	0.677
PC6	0.810	0.783	0.581	0.544
PC7	0.565	0.739	0.552	0.413
PC8	0.601	0.701	0.525	0.461
PM1	0.556	0.476	0.772	0.677
PM2	0.511	0.473	0.796	0.676
PM3	0.547	0.591	0.690	0.475
PM4	0.568	0.693	0.793	0.427
PM5	0.511	0.645	0.750	0.433
PTC1	0.497	0.443	0.415	0.779
PTC10	0.544	0.429	0.530	0.815
PTC11	0.754	0.477	0.550	0.873
PTC12	0.709	0.585	0.485	0.765
PTC13	0.606	0.533	0.526	0.865
PTC14	0.630	0.418	0.525	0.792
PTC2	0.463	0.560	0.369	0.683
PTC3	0.487	0.537	0.388	0.771
PTC4	0.451	0.403	0.417	0.663
PTC5	0.541	0.573	0.186	0.635
PTC6	0.523	0.335	0.514	0.791
PTC7	0.491	0.484	0.471	0.639
PTC8	0.516	0.580	0.483	0.443
PTC9	0.496	0.554	0.406	0.722

Table 6: HTMT Ratio

Cross Loading of Indicators

This is the 2nd test for regulating discriminant validity and defines factor loading indicator must be greater than 0.7. (Makransky et al. 2019) in the study defines the threshold standards for cross-loading as 0.5, 0.6, and 0.7. The items which have values less than 0.4 must be removed because that means they are not contributing cross-loading and average variance extracted (Ali,2018), defines those subjective independences enable to minimize multicollinearity between the variables those donate the AVE is greater than square-correlation between variables and latent variable.

The table above shows, cross-loading construct for each of the indicators and it is identified that it is greater than the construct specified.

HTMT "Heterotrait – Monotrait Ratio"

HTMT ratio is the third test that regulates the variables correlation. (Torlak ,2021), discusses that the HTMT threshold value must be less than 1 which means variable items are discriminately valid and their validity is closer to 1. Given below are the results of this test.

	МС	РС	PM	РТС
MC				
PC	0.890			
PM	0.846	0.823		
PTC	0.728	0.472	0.690	

Table 7	: HTI	MT Ratio
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The table above shows that all values are less than 1 and cannot provide any clue that they are closer to 1. Hence, test results demonstrated the discriminant validity of data. Additionally, the values in the table depict that the variables construct doesn't hold any multicollinearity. From the table each variable value is not correlated as they have no correlation so that regression model predicts associate variance in the outcome with correct variable.

Discussion And Implication

Theoretical Implication

The research assists the firms to achieve competitive benefits by considering performance climate and mastery climate to manage project teams and individuals to improve and enhance project team collaboration. The study overall provides a significant and theoretical contribution to the existing study. From the research result climates i.e., performance climate and master climate, prosocial motivation, and project team collaboration would be added to the project management literature. The first objective of the research is to examine and determine the impact of PC and MC on PTC with the mediating role of PM.

As, in the existing study, the conceptual model used is not examined and tested and that adds value to the present circumstance of with the associations which are project-based. Working in the project team is considered optimal for achieving success in the project, environment within the organization that is managing and leading the project is available for the project team performance, and this affects the interdependence, beliefs, and value of individuals. The research identifies that performance climate and mastery climate increase the project team collaboration that empowers and motivates the team to

accommodate changes in the project. However, both Performance Climate and Mastery Climate nature are versatile, and they assist individuals to learn new things with growing trends and empower them to meet the expected project performance.

Prosocial motivation as a mediator between project climate factors (Mastery Climate and Performance Climate) and Project team collaboration is never discussed and experimented with within the existing research. So, it provides novelty in the theoretical contribution of the outcomes in the research.

Practical Implication

For the world, research plays an equal role. As everything is enhancing and growing with increasing trends, The research contributed to the IT industry firms to maximize the project team collaboration by focusing on the performance climate and mastery climate as these things can support decision making with added value and the role of prosocial motivation. These things result in the enhancement of project effectiveness and efficiency. Additionally, research provides a detailed description of the project environment within the organization that is a projectized organization and support project manager to improve project team collaboration by adapting the system of the performance climate and mastery climate that ensure the improvement of project performance by considering prosocial motivation and behavior. To enhance the productivity of the project, the project manager and leaders are required to focus on sustaining and developing such type of cooperation, climates as well as behavior between the individuals and teams.

Policy Implication

The research enables organizations and companies of the IT sector to attain sustainable competitive benefits by considering PC and MC with the mediating role of Prosocial Motivation to improve project team collaboration. The research identified project manager must devote their efforts, resources, and attention to project team collaboration because this is the only cost-effective and contemporary approach to achieve desired goals and objectives of firms.

Conclusion And Future Direction

In the modern era, project managers need to pay high attention to the project environment to achieve success in the project. When individuals in the project team are working together without any conflicts then goals and processes are aligned. On the other hand, leading group to a high rate of success to accomplish desired goals. With the growing competition in the markets, it is critical and crucial to encourage and support collaboration in the project environment and at the workplace. Project team collaboration can improve and enhance productivity, spur creativity and innovation and increase the satisfaction of team members. With the right practices and mindsets, project team collaboration would be considered a unique differentiator for the project managers and organization.

The research's main purpose is to examine the relationship of climate factors and PTC with mediating role of PM For the research data is collected using the questionnaire survey. To completed the survey, 250 questionnaires are distributed 202 responses are returned and from them, 194 are used for the analysis of research. Statistical analysis in research defines the scale consistency used for the model variables. All research hypothesis are accepted and supported and indicate that both climate factors have a positive and strong influence on the project team collaboration and that is mediated by prosocial motivation. The research adds value and contributed to the project management by incorporating the relationships tested for the variables to improve the performance project because on these variables the existing researches are very limited.

The study research on the impact of PC and MC on PTC with mediating role of PM enables project managers and business leaders to improve collaboration among the project team and individuals along with resolving all types of conflicts. With this regard, research also has several future research directions. Firstly, in current research, data is a cross-section and in future research, the research framework is tested and examined using the longitudinal data. Secondly, there are several factors that can also affect the project team collaboration that can be included in the future study and the factors include Self-Efficacy and Self-Confidence. These variables would be included in the future research having the relationship of project team collaboration with mediating role of prosocial motivation.

References

Amiri, I. S., Akanbi, O. A., & Fazeldehkordi, E. (2014). A machine-learning approach to phishing detection and defense. Syngress.

Albaum, G. S., Albaum, G., & Duerr, E. (2008). *International marketing and export management*. Pearson Education.

Amin, I., Zailani, S., & Rahman, M. K. (2021). Predicting employees' engagement in environmental behaviours with supply chain firms. *Management Research Review*, 44(6), 825-848.

Ashraf, M. A. (2019). The mediating role of work atmosphere in the relationship between supervisor cooperation, career growth and job satisfaction. *Journal of Workplace Learning*.

Ayling, J. (2021). *Putting AI ethics to work: are the tools fit for purpose for SMEs?* (Doctoral dissertation, University of Southampton).

Ali, F., Rasoolimanesh, S. M., Sarstedt, M., Ringle, C. M., & Ryu, K. (2018). An assessment of the use of partial least squares structural equation modeling (PLS-SEM) in hospitality research. International Journal of Contemporary Hospitality Management

Buch, R., Nerstad, C. G., & Säfvenbom, R. (2017). The interactive roles of mastery climate and performance climate in predicting intrinsic motivation. *Scandinavian journal of medicine & science in sports*, 27(2), 245-253.

Bairagi, V., & Munot, M. V. (Eds.). (2019). *Research methodology: A practical and scientific approach*. CRC Press.

Basias, N., & Pollalis, Y. (2018). Quantitative and qualitative research in business & technology: Justifying a suitable research methodology. *Review of Integrative Business and Economics Research*, 7, 91-105.

Babii, A. (2020). Important aspects of the experimental research methodology. *Вісник Тернопільського* національного технічного університету, 97(1), 77-87.

Bertoni, M. (2019). Multi-criteria decision making for sustainability and value assessment in early PSS design. *Sustainability*, *11*(7), 1952.

Braglia, M., & Frosolini, M. (2014). An integrated approach to implement project management information systems within the extended enterprise. *International Journal of Project Management*, *32*(1), 18-29.

Carnevale, J. B., Huang, L., & Paterson, T. (2019). LMX-differentiation strengthens the prosocial consequences of leader humility: An identification and social exchange perspective. *Journal of Business Research*, *96*, 287-296.

Cassar, L., & Meier, S. (2018). Nonmonetary incentives and the implications of work as a source of meaning. *Journal of Economic Perspectives*, 32(3), 215-38.

Chu, T. L., & Zhang, T. (2018). Motivational processes in Sport Education programs among high school students: A systematic review. *European Physical Education Review*, 24(3), 372-394.

Coffey, L., & Davis, A. (2019). The holistic approach to academia: Traditional classroom instruction and experiential learning of student-athletes. *Education Sciences*, 9(2), 125.

Cortellazzo, L., Bruni, E., & Zampieri, R. (2019). The role of leadership in a digitalized world: A review. *Frontiers in psychology*, *10*, 1938.

Caniëls, M. C., Chiocchio, F., & van Loon, N. P. (2019). Collaboration in project teams: The role of mastery and performance climates. *International Journal of Project Management*, *37*(1), 1-13.

Chiocchio, F., Grenier, S., O'Neill, T. A., Savaria, K., & Willms, J. D. (2012). The effects of collaboration on performance: A multilevel validation in project teams. *International Journal of Project Organisation and Management*, 4(1), 1-37.

Civelek, M. E. (2018). Essentials of structural equation modeling. *Essentials of Structural Equation Modeling* (2018).

Crespo, L. R. Á., Ojeda, J. L. M., Salas, L. S., & Gómez, X. S. G. (2019). Consolidate the responsibility value from the Research Methodology and Statistics subject. *EduMeCentro*, *11*(3), 131-144.

Đorđeska, M. (2019). General principles of law recognized by civilized nations: method, inductive-empirical analysis and (more) 'scientific' results. In *Pluralising International Legal Scholarship*. Edward Elgar Publishing.

Darisipudi, A., & Sharma, S. K. (2008). Blogs: A Computer Mediated Communication Tool for Virtual Team Collaboration. In *Handbook of Research on Computer Mediated Communication* (pp. 720-730). IGI Global.

Devi, P. S. (2017). Research methodology: A handbook for beginners. Notion Press.

Deng, L., Yang, M., & Marcoulides, K. M. (2018). Structural equation modeling with many variables: A systematic review of issues and developments. *Frontiers in psychology*, *9*, 580.

Dufour, F., & Charlesworth, Z. M. (2019, July). Interdisciplinary project teams: dynamics of interdisciplinarity, collaboration and, performance. In *Academy of Management Proceedings* (Vol. 2019, No. 1, p. 12829). Briarcliff Manor, NY 10510: Academy of Management.

Edge, J., & Attia, M. (2015). Communication, technology and collaboration for innovation. In *Team Teaching and Team Learning in the Language Classroom* (pp. 115-126). Routledge.

Edge, J., & Attia, M. (2015). Communication, technology, and collaboration for innovation. Team Teaching and Team Learning in the Language Classroom, 115-126. doi:10.4324/9781315718507-11

Feyzi Behnagh, R., & Yasrebi, S. (2020). An examination of constructivist educational technologies: Key affordances and conditions. *British Journal of Educational Technology*, *51*(6), 1907-1919.

Graham, C., & Daniel, H. (2021). Fault lines in virtual team leadership and team performance in undergraduate virtual team short-term projects. *International Journal of e-Collaboration (IJeC)*, 17(1), 1-14.

Grant, A. M., & Sumanth, J. J. (2009). Mission possible? The performance of prosocially motivated employees depends on manager trustworthiness. *Journal of Applied Psychology*, *94*(4), 927.Gemünden, H. G., Lehner, P., & Kock, A. (2018). The project-oriented organization and its contribution to innovation. International Journal of Project Management, *36*(1), 147-160

Grzesik, K., & Piwowar-Sulej, K. (2018). Project managers' competencies and leadership styles from the perspective of organizations functioning in Poland. *Journal of Entrepreneurship, Management and Innovation*, 14(3), 35-60.

Johnson, J. M., Hermosura, B. J., Price, S. L., & Gougeon, L. (2021). Factors influencing interprofessional team collaboration when delivering care to community-dwelling seniors: A metasynthesis of Canadian interventions. *Journal of Interprofessional Care*, *35*(3), 376-382.

Hu, J., & Liden, R. C. (2015). Making a difference in the teamwork: Linking team prosocial motivation to team processes and effectiveness. *Academy of Management Journal*, *58*(4), 1102-1127.

Hutchins, S. G., & Kendall, T. (2010). *Analysis of team communications to understand cognitive processes used during team collaboration*. NAVAL POSTGRADUATE SCHOOL MONTEREY CA GRADUATE SCHOOL OF OPERATIONAL AND INFORMATION SCIENCES.

Hwang, H., Cho, G., Jung, K., Falk, C. F., Flake, J. K., Jin, M. J., & Lee, S. H. (2021). An approach to structural equation modeling with both factors and components: Integrated generalized structured component analysis. *Psychological Methods*, *26*(3), 273.

Hope, J., & Player, S. (2012). Beyond performance management: Why, when, and how to use 40 tools and best practices for superior business performance. Harvard Business Press.

Ika, L. A. (2009). Project success as a topic in project management journals. *Project management journal*, 40(4), 6-19.

Kessler, G. (2018). Technology and the future of language teaching. *Foreign language annals*, *51*(1), 205-218.

Kipp, L. E., & Bolter, N. D. (2020). Motivational climate, psychological needs, and personal and social responsibility in youth soccer: Comparisons by age group and competitive level. *Psychology of Sport and Exercise*, *51*, 101756.

Kumar, R. (2018). Research methodology: A step-by-step guide for beginners. Sage.

Kuntz, J., Connell, P., & Näswall, K. (2017). Workplace resources and employee resilience: The role of regulatory profiles. *Career development international*.

Lisak, A., & Erez, M. (2009, February). Leaders and followers in multi-cultural teams: Their effects on team communication, team identity and team effectiveness. In *Proceedings of the 2009 international workshop on Intercultural collaboration* (pp. 81-88).

Leppänen, J. (2019). A study on sales, scheduling and resource planning in project environments.

Martin, F., & Bolliger, D. U. (2018). Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment. *Online learning*, 22(1), 205-222.

Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government information quarterly*, *36*(4), 101385.

Müller, R., Drouin, N., & Sankaran, S. (2019). Organizational project management: Theory and implementation. Edward Elgar Publishing.

Menekse, M., Higashi, R., Schunn, C. D., & Baehr, E. (2017). The role of robotics teams' collaboration quality on team performance in a robotics tournament. *Journal of Engineering Education*, *106*(4), 564-584.

Mueller, R. O., & Hancock, G. R. (2019). *Structural equation modeling*. Routledge/Taylor & Francis Group.

Makransky, G., & Petersen, G. B. (2019). Investigating the process of learning with desktop virtual reality: A structural equation modeling approach. *Computers & Education*, *134*, 15-30.

Mohajan, H. K. (2018). Qualitative research methodology in social sciences and related subjects. *Journal of economic development, environment and people*, 7(1), 23-48.

Nerstad, C. G., Roberts, G. C., & Richardsen, A. M. (2013). Achieving success at work: development and validation of the M otivational C limate at W ork Q uestionnaire (MCWQ). *Journal of Applied Social Psychology*, *43*(11), 2231-2250.

Nerstad, C. G., Searle, R., Černe, M., Dysvik, A., Škerlavaj, M., & Scherer, R. (2018). Perceived mastery climate, felt trust, and knowledge sharing. *Journal of Organizational Behavior*, *39*(4), 429-447.

Nayak, J. K., & Singh, P. (2021). Fundamentals of research methodology problems and prospects. SSDN Publishers & Distributors.

Nicholls, A. (2018). A general theory of social impact accounting: Materiality, uncertainty and empowerment. *Journal of Social Entrepreneurship*, 9(2), 132-153.

Ohlert, J., & Zepp, C. (2016). Theory-based team diagnostics and interventions. In *Sport and exercise psychology research* (pp. 347-370). Academic Press.

Patole, M. (2018). Localization of SDGs through disaggregation of KPIs. *Economies*, 6(1), 15.

Podgórska, M., & Pichlak, M. (2019). Analysis of project managers' leadership competencies: project success relation: what are the competencies of polish project leaders?. *International Journal of Managing Projects in Business*.

Parisi, J. A., & Brungart, D. S. (2005). Evaluating communication effectiveness in team collaboration. In *Ninth European Conference on Speech Communication and Technology*.

Parrish, K. (2013). A Path to Successful Energy Retrofits: Early Collaboration through Integrated Project Delivery Teams.

Piorkowski, D., Park, S., Wang, A. Y., Wang, D., Muller, M., & Portnoy, F. (2021). How ai developers overcome communication challenges in a multidisciplinary team: A case study. *Proceedings of the ACM on Human-Computer Interaction*, 5(CSCW1), 1-25.

Pandey, P., & Pandey, M. M. (2021). Research methodology tools and techniques. Bridge Center.

Phillips, M. A., & Ritala, P. (2019). A complex adaptive systems agenda for ecosystem research methodology. *Technological Forecasting and Social Change*, 148, 119739.

Ruggles, W. S., & Harrington, H. J. (2018). A contemporary framework for applying project management and continual improvement for performance improvement teams. Project Management for Performance Improvement Teams, 19-33. doi:10.4324/9781315117683-2

Ridenhour, E., & Martin, E. (2021). *Creating a mastery climate in high school athletics* – PHE America. Retrieved from <u>https://www.pheamerica.org/2021/creating-a-mastery-climate-in-high-school-athletics/</u>

Ringle, C. M., Sarstedt, M., Mitchell, R., & Gudergan, S. P. (2020). Partial least squares structural equation modeling in HRM research. *The International Journal of Human Resource Management*, *31*(12), 1617-1643.

Rajhans, K. (2018). Effective communication management: A key to stakeholder relationship management in project-based organizations. *IUP Journal of Soft Skills*, *12*(4), 47-66.

Richards, D. P., Jordan, I., Strain, K., & Press, Z. (2018). Patient partner compensation in research and health care: the patient perspective on why and how. *Patient Experience Journal*, *5*(3), 6-12.

Shin, M. H. (2018). Effects of Project-Based Learning on Students' Motivation and Self-Efficacy. *English Teaching*, 73(1), 95-114.

Spears, K. S. (2021). "Best Kept Secret": Perspectives from Adult Day Care Staff. University of Washington.

Sedam, M. W. (2015). *Team communication: the social identity approach to collaboration*. Naval Postgraduate School Monterey United States.

Srivastava, P. R. (2020). Communication, Collaboration & Trust: Interpersonal Challenges in Virtual Collaboration Team. *International Journal of English Literature and Social Sciences*, *5*(4), 1273-1278.

Sarstedt, M., & Cheah, J. H. (2019). Partial least squares structural equation modeling using SmartPLS: a software review.

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of business research*, 104, 333-339.

Tien, N. H. (2019). International economics, business and management strategy. *Dehli: Academic Publications*.

Torlak, N. G., Demir, A., & Budur, T. (2021). Using VIKOR with structural equation modeling for constructing benchmarks in the Internet industry. *Benchmarking: An International Journal*, 28(10), 2952-2976.

Tripathi, K. K., & Jha, K. N. (2018). Determining success factors for a construction organization: A structural equation modeling approach. *Journal of management in engineering*, *34*(1), 04017050.

Thamhain, H. J., & Asgary, N. (2013, June). Team collaboration in multinational R&D projects. In 2013 International Conference on Engineering, Technology and Innovation (ICE) & IEEE International Technology Management Conference (pp. 1-13). IEEE.

Zuo, J., Zhao, X., Nguyen, Q. B. M., Ma, T., & Gao, S. (2018). Soft skills of construction project management professionals and project success factors: A structural equation model. *Engineering, Construction and Architectural Management*.

Zwikael, O., & Meredith, J. (2019). Evaluating the success of a project and the performance of itleaders. *IEEE transactions on engineering management*, 68(6), 1745-1757.7.