Team Effectiveness: A Key to Success in 'IT Organizations'

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Abstract

This study is an attempt is to examine the relationship between different characteristics which makes project teams effective and lead to the success of projects in IT organizations.
A survey was conducted on 110 IT professionals who are part of various project teams in IT organizations. A correlation test is used to see the interdependence, and a linear regression model is used to establish a relationship in team effectiveness variables. The result shows that team purpose and goals, team roles, team processes and team relationships contribute to the team's effectiveness and are interdependent. Team purpose & goals and team relationships are positively related. Team roles are also positively related to team processes. There is a need to build and maintain effective teams to maximize team productivity in the organization. This paper lays emphasis on the necessity of investing efforts in various team effectiveness dimensions, regarding team purpose and goals, team roles, team processes and team relationships for developing effective teams. Teamwork is an important lever to create a competitive edge in a globalized competitive environment, so this study contributes significantly to evaluating characteristics responsible for team effectiveness in IT organizations and would be useful for managers to create effective & resilient teams as workplace resilience has been considered an essential asset for enhancing performance and well-being in the face of challenging circumstances.

JEL classification: M12, M14, M53, M54

Keywords: Efficiency, Effectiveness, Teams, Teamwork, Team processes

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1. Introduction:

Teamwork is appreciated as a core value in organizations. Teams are considered to be a foundation block of organizations. Nowadays, team-based structures are encouraged to cope with complex and contemporary work environments (Katzenbach & Smith, 2015). There has been a dramatic revolution in organizational structures around the world over the last decade. Although financial, strategic, and technical imperatives are fuelling this revolution, one of its most fascinating characteristics has been a continuing shift away from work structured around individual jobs, which has given way to team-based organizational structures (Kozlowski and Bell,2001). Technology is also allowing multicultural teams to collaborate around the globe.

United Nations' sustainable development goal 3 aims to ensure healthy lives and to promote well-being for all by 2030 (United Nations, 2022). Well-being has a significant impact on resilience. Workplace resilience has been considered an essential asset for enhancing performance and well-being in the face of challenging circumstances. Resilience has been studied as an individual skill and a team-level construct involving team processes for effectively managing stress and positively coping with adversity.

Organizations need a resilient workforce who can efficiently work in a project team set up as resilient team members are skilled to deal with workplace difficulties and stressors therefore, team resilience is vital in situations when ineffective teamwork can have major impacts. As team-based structures have gained in popularity in recent years, it is essential to study how well teams address common difficulties that may disrupt team functioning (Hartwig et al., 2020).

A core ideology of IT sector-based organizations is the concept of teamwork; project success or failure is determined by the effectiveness of the numerous teams that work in that organization. Therefore, it is essential to look into the relationship between different characteristics which makes project teams effective and lead to the success of projects.

A team is characterized by constituting members who hold shared goals and act interdependently to achieve them. Katzenbach & Smith (2015) assert that "a team is a small number of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable."

Kozlowski and Bell (2003) state that work teams are "collectives who exist to perform organizationally relevant tasks, share one or more common goals, interact socially, exhibit task interdependencies, maintain and manage boundaries, and are embedded in an organizational context that sets boundaries, constrains the team, and influences exchanges with other units in the broader entity."

As per Collin's dictionary, "The readiness of a group of individuals to collaborate in order to accomplish a common goal is referred to as teamwork". Webster's World Dictionary describes teamwork as "joint action by a group of people, in which each person subordinates his or her individual interests and opinions to the unity and efficiency of the group."

Team Dynamics-Teams are intricate, dynamic systems that are incorporated into a multilevel system of organization (individual, team & organization), grow over time as members engage with one another, and evolve and adapt when new demands arise (Kozlowski & Ilgen, 2006). Team dynamics is termed as the features of the system by which people in the team interact with one another. It includes expertise, integrity, and individual dynamism (Prugsamatz, 2010).

Team dynamics are essential for the success of project work because members efficiently utilize the group's cognitive resources and help prevent "groupthink". This is crucial for IT project teams in particular because they foster learning processes and the production of new knowledge through

dynamic interactions. Team dynamics also help the team to make the best decisions and carry them out more effectively as compared to those teams where individuals are not inclined to work as a team. It also helps the team to manage the work efficiently in an uncertain environment. (Gelbard & Carmeli, 2009).

Positive team dynamics increase the efficiency of collaboration. This will promote a better workplace atmosphere with happy employees who are, therefore, more productive. (O'Connor & Basri, 2012)

Effective teams are pillars of successful enterprises, especially in rapidly changing situations. Team effectiveness is greatly influenced by reflexivity. Teams will be more productive when members collaboratively reflect on how they operate and the environment in which they work. (Schippers et al., 2007) Team members give better results when they get flexibility and autonomy to perform their work. (Peeters et al., 2022).

Teamwork allows companies to make greater use of their employees. All companies who want to increase their business's efficiency need to rely on the work teams. A dysfunctional team can lead to falling short of performance goals, so building effective teams are the primary aim of any company (Shah et al., 2022).

Performance management plays a vital role in ensuring competitive advantage in a volatile business environment marked by pressure to improve productivity. Organizations face problems in fostering dedication to the discretionary effort, which is becoming an increasingly important component of gaining a competitive edge. The concept that teams can do more than the sum of individual efforts is called synergy, which is crucial to gaining a competitive advantage (Rowland, 2013).

2.   Literature Review:

Rising global market opportunities have led to a large number of teams across organizations in various industries. The information technology industry is also thriving on this concept. The ongoing technological revolution has made it possible and profitable for team members to develop a thorough understanding of how teams interact, which has also resulted in collaboration between and within teams. Team process and performance is a dynamic and complex phenomena. Sometimes teams fail to achieve the desired results. Thus, developing a thorough understanding of how teams interact synchronously to achieve shared goals is critical to meeting short-term tactical objectives and cultivating long-term strategic successes.

In terms of demand for IT solutions, the IT industry is expanding. Improving the technology development process is crucial in the increasingly competitive IT business. A group of talented programmers does not always constitute a great team. Few programmers have personality conflicts that prevent them from working productively together. Teams made up of good programmers might have extraordinary talent and capacity, but they are unable to function to their expected capacity due to personality conflicts or other issues (Rajendran, 2005).

Many profound authors are reviewing the previous research in the area of teamwork and team effectiveness in organizations. There have been numerous reviews of research on the effectiveness of teams which provide empirical evidence addressing teamwork and some of the aspects of team effectiveness. Seminal work has been done to find the important attributes of highly effective teams. Larson and LeFasto (1989) emphasized that "clear and elevating goal setting, a results-driven structure, having competent team members, unity in commitment, having a climate of collaboration, setting standards of excellence, creating external support and recognition led by principled leadership increases the effectiveness in teams."

Teams are involved in activities that aim toward a shared goal, and their members have specialized skills relevant to their jobs. In order to produce speedier and higher-quality results, a group of individuals with varied talents, knowledge, and personalities must work smoothly together. This is what teamwork is all about (Yap et al., 2020).

2.1 Team Effectiveness:

Team effectiveness is the ability of a team to fulfill its goals and objectives, which results in better outputs for team members (e.g., team member satisfaction and desire to work together), in addition to team-generated or influenced results. Team performance is also used as a synonym for team effectiveness in literature.

Teams' success or failure is determined by the team's internal characteristics, e.g. knowledge of the individual, personality, size of the team and team process, e.g. information exchange, team environment, etc. (Volmer & Sonnentag, 2011).

As team effectiveness is crucial in obtaining the success of a project, the following traits are critical for effective team performance: team leadership, management support, interactions of the team members, clarity of goals, and openness (Adu & Opawole, 2020). A good team will be formed by a collection of highly skilled individuals. Team members should display collaboration, competency, and leadership skills in addition to being technically capable of doing their responsibilities, and the team as a whole must participate in successful communication and team processes (Lacerenza et al., 2018).

Setting up the agile method of functioning into practice could be a good strategy for firms to boost team productivity and engagement. Teams may discover that making a much broader strategy where they can add new tasks every day will be beneficial for organizations. This works similarly to "sprint planning" in that it gives teams freedom while allowing them to manage the activities that need to be completed. It also supports the idea of a rapid product turnover. (Peeters et al., 2022).

A variety of uncertainties are brought on by changing markets, advancing technology, and rising demands from clients. Teams must constantly learn, adapt, and grow if they want to continue to be successful and innovative in these demanding circumstances. High team performance requires constant team learning and improvement activities. (Kneisel, 2020). Teams that regularly serve the demands of customers, workers, investors and other stakeholders in their purview are described as 'high-performance teams'. These teams usually outperform other teams by producing the same services under equal circumstances (Castka et al., 2001). According to Sharp et al., (2000), a high performance team is a "team of people who have unleashed their potential toward their stakeholders' shared purpose".

2.2 Characteristics of Effective Teams:

There are various characteristics that affect teamwork. Highly effective teams share a common purpose and goal. Everyone in the team is aware of their roles & responsibilities. Teams are flexible enough to adapt to the changing needs in work processes. Good intergroup relations, good communication, mutual cooperation and trust, openness, passion and commitment are the key elements of highly effective and successful teams. Important characteristics which are taken into consideration in this study are as follows-

2.2.1 Team Purpose & Goals:

Every organization has a clear mission and vision statement, which encompasses its underlying value and communicates across the organization. Clear team goals are derived from them. Effective teams always invest their resources to explore and understand team purpose & goals, which are in sync with the overall organizational goals. According to Ivey et al., (1988); Loxley (1997), Team members are motivated to showcase their commonalities without compromising their distinctive

professional contributions when they have a superordinate purpose beyond their professional objectives. Elements of goal setting and role clarification provide a clear picture of the duties that may cause changes in the team process (Lacerenza et al., 2018).

Team members feel personally responsible and accountable for achieving those goals when they are deeply committed to team goals. As a result, those team members who are very much dedicated towards team goals are more inclined to adjust approaches to goal fulfilment and to advocate for establishing and adopting new methods of doing things to promote goal achievement (Rousseau et al., 2013). Teams are efficient when all members are united. Both individual and team members need regular feedback and appreciation of progress towards team goals (Mickan & Rodger, 2000).

2.2.2 Team Roles:

The broad concept of a 'role' is considerably more sociological in nature, referring to an individual's overall background and the responsibilities associated with it. (Manning et al., 2006) Individuals are grouped together to achieve organizational goals. Teams may be formal or informal, large or small. According to Belbin (1984), Team roles are defined as "a tendency to behave, contribute and interrelate with others in a particular way. An understanding of the team constitution and team member's roles can lead to a greater understanding of team effectiveness and team development". Team members get a better idea of their own and their colleagues' obligations at work by developing a clear demarcation of roles and responsibilities. Clarity of roles helps in reducing misunderstanding during job performance, allows mutual support, and results in positive outcomes (Lacerenza et al., 2018).

Team building activities based on individuals' desired team responsibilities may impact how a team manages and resolves conflict. Team members' roles relate to the manner in which members engage with others when accomplishing a task. As members engage with one another, a common culture emerges that can reinforce specific team responsibilities. As the team culture develops, team roles become more distinct from one another, requiring interpersonal agreement on the significance and nature of each team position. As a method of reinforcing oneself, members tend to acquire abilities, allowing them to take on various responsibilities in accordance with the team's demands as the teams progress. (Aritzeta et al., 2005).

2.2.3 Team Processes:

Team processes explain the basic features of the interaction and organizational patterns that translate input into output (Mickman & Rodger, 2000). Mutually dependent acts of members that transform inputs into results via intellectual, physical, and behavioural activities aimed at coordinating tasks to meet collective goals are team processes (Marks et al., 2001).

According to Kozlowski & Ilgen (2006), Team processes are the mechanisms through which team members organize and manage their resources (cognitive, affective, and behavioural) to fulfil work expectations required for goal achievement. A team becomes effective when its all resources are properly linked with job requirements. As a result, team processes serve as the key factor for increasing team performance.

2.2.4 Team Relationships:

Robust relationship between team members is the key to the success of any organization. Healthy and supportive relationships among team members maintain effective teams. According to Kirkman and Rosen (1999), People can gain strategic knowledge, a better understanding of team tasks and have faith in the efficiency of the team with the aid of social networks, both inside and outside of the teams. Social connections are essential for maintaining effective teams. Individually, team members who are understanding and supportive of their co-workers provide helpful assistance, share knowledge, and work together to find solutions to problems. To be productive, team members must demonstrate a higher degree of collaboration, understanding, transparency,

and regular and effective communication skills. Where there is mistrust about the motives of others, teamwork is impossible (Adu & Opawole, 2020).

With the increased use of work teams, it is crucial for businesses to thoroughly assess the qualities needed in a person to function as a successful team member. (Honts et al., 2012).

Knowledge sharing in teamwork only succeeds when team members actively participate in disseminating information and effectively using information by forthcoming teams/ new project teams (Wickramasinghe & Widyaratne, 2012).

Skills of team members, problem-solving abilities, passion & commitment, interpersonal relationships etc., are other dimensions of team effectiveness that can be studied in other research, but we have emphasized studying Team purpose and goals, Team roles, Team processes and Team relationships.

2.3 Research Questions:

Are the team effectiveness components interdependent?

Are team purpose and goals related to team relationships?

Are team roles related to the team processes?

2.4 Research Objectives:

To study the interdependence of team purpose and goals, team role, team process and team relationships.

To establish the relationship between the team purpose and goals and team relationships.

To establish the relationship between the team role and the team process

3. Research Methodology:

This research deepens our knowledge of how teams operate in organizational contexts and is exploratory in nature.110 IT professionals of various project teams in IT organizations are considered as respondents (Sample) for the study. Primary data was collected through an online survey method. The sample was chosen through a random sampling method.

3.1 The Measures of Teamwork Effectiveness:
The survey questionnaire is adapted from "Team Effectiveness Diagnostic" developed by "London Leadership Academy, National Health Service". The original survey includes 56 items designed on eight team effectiveness dimensions on a 5-point Likert scale. Only four dimensions (including 28 questions, 7 questions per dimension) are considered for getting responses from the sample. These dimensions are "Team Purpose and Goals, Team Roles, Team Processes and Team Relationships". IBM SPSS 25 software is used for data analysis purposes.

3.2 List of dimensions: - Team effectiveness dimensions are as follows-

Table 1: List of Team Effectiveness Dimensions

Team Purpose & Goals
"Our team has a meaningful, shared purpose".
"We are strongly committed to a shared mission".
"We focus on big-picture strategic issues as much as on day-to-day activities".

"We set and meet challenging goals".
"We consistently produce strong, measurable results".
"We make sure our work helps the organization achieve its goals".
"The mission and goals of my team are well aligned with the organization's mission and goals".
Team Roles
"Team members clearly understand their role".
"When an individual's role changes, an intentional effort is made to clarify it for everyone on the team".
"Team members understand one another's roles".
"Everyone values what each member contributes to the team".
"Team members avoid duplication of effort and make sure they are clear about who is doing what".
"When team members' roles change, specific plans are implemented to help them assume their new responsibilities".
"Overlapping or shared tasks and responsibilities do not create problems for team members".
Team Processes
"Team problem solving results in effective solutions".
"We address and resolve issues quickly".
"People on my team are rewarded for being team players".
"Group meetings are very productive".
"Our team has mechanisms in place to monitor its results".
"Our team works with a great deal of flexibility so that we can adapt to changing needs".
"When we choose consensus decision-making, we do it effectively".
Team Relationships
"Team members appreciate one another's unique capabilities".
"Team members are effective listeners".
"Communication in our group is open and honest".
"Members of our team trust each other".
"Team members help one another deal with problems or resolve issues".
"We are able to work through differences of opinion without damaging relationships".
"Team members display high levels of cooperation and mutual support".

4. Hypotheses and Findings:

Demographic analysis of this research indicates that the majority of the participants were under the age group of 25-35 (52.73%), 27.27% of participants were under 35-45 years, and the remaining 10% were under 25 years of age & 10% are of above 45 years of age. 66.36% of respondents are male, and 33.64% are female. 38.18% of respondents have worked in IT organizations for more than 10 years. Most of the participants, 56.36%, are post graduates, while 37.27% are graduates. Diploma holders are 3.64% & other qualification holders are 2.73%. Demographic Characteristics of Respondents are shown in Table 2.

Table 2: Demographic Characteristics of Respondents

Description	No of Responses	Respondent %
Age Group		
<25 years	11	10.00
25-35 years	58	52.73
35-45 years	30	27.27
>45 years	11	10.00
Gender		
Male	73	66.36
Female	37	33.64
Work Experience		
<2 years	7	6.36
2-5 years	20	18.18
5-8 years	27	24.55
8-10 years	14	12.73
>10 years	42	38.18
Education		
Diploma Holder	4	3.64
Graduation	41	37.27
Post-Graduation	62	56.36
Other	3	2.73

Note: N=110

4.1 Reliability Analysis: Constructs of each variable is tested for reliability and all the variables shows good reliability which is above .8 (Cronbach's alpha value) as shown in table3.

Table3: (Reliability Analysis)

Dimensions	Team Purpose and Goals	Team Roles	Team Processes	Team Relationships
Cronbach's Alpha	.925	.910	.919	.943

4.2 Hypotheses Testing:

Hypotheses are framed to understand the team effectiveness constituent's interdependence, how team purpose and goals relate to team relationships and how team roles are related to the team process. Hypotheses are tested as follows-

Hypothesis 1: Team purpose and goals, team role, team process and team relationship variables are interdependent.
Test: Correlation
Level of significance: α =0.05

Table4: (Correlation in variables)

Correlations

		Team Purpose & Goals	Team Roles	Team Processes	Team Relationships
Team Purpose & Goals	Pearson Correlation	1	.794**	.805**	.721**
	Sig. (2-tailed)		.000	.000	.000
Team Roles	Pearson Correlation	.794**	1	.851**	.857**
	Sig. (2-tailed)	.000		.000	.000
Team Processes	Pearson Correlation	.805**	.851**	1	.835**
	Sig. (2-tailed)	.000	.000		.000
Team Relationship	Pearson Correlation	.721**	.857**	.835**	1
	Sig. (2-tailed)	.000	.000	.000	.

**. Correlation is significant at the 0.01 level (2-tailed).
Sample (N) = 110

Team Purpose and goals are significantly correlated to Team Roles, Team Processes, Team Relationships (r values=.794**, .805**, .721** respectively value= $.000 < .05$ α value)

Team Roles are significantly correlated to Team Purpose and Goals, Team Processes, Team Relationships (r values=.794**, .851**, .857**respectively, p value= $.000 < .05$ α value)

Team Processes are significantly correlated to Team Purpose and Goals, Team Roles, Team Relationships (r values=.805**, .851**, .835**respectively value= $.000 < .05$ α value)

Team Relationships are significantly correlated to Team Purpose and Goals, Team Roles, Team Processes (r values=.721**, .857**, .835**respectively value= $.000 < .05$ α value)

From the above observations, it can be concluded that all variables are independent; therefore, alternative hypothesis 1 is supported (see Table 4).

Hypothesis 2-Team purpose and goals are positively related to the team relationships.

Test: Linear Regression

Level of significance: α =0.05

Table 5: Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.721ᵃ	.521	.516	.64428	.521	117.235	1	108	.000

a. Predictors (Constant), Team Purpose & Goals
b. Dependent Variable: Team Relationships

Table 6: ANOVA Results

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	48.664	1	48.664	117.235	.000[b]
	Residual	44.831	108	.415		
	Total	93.495	109			

a. Predictors (Constant), Team Purpose & Goals
b. Dependent Variable : Team Relationships

R square is .521, which indicates that 52.1% part of the team relationship is explained by team purpose and goals and shows a significant positive relationship, F=117.235, p value=.000<.05 (Level of significance: α); therefore, the hypothesis that team purpose and goals are positively related to team relationships is supported (see Tables 5&6).

Hypothesis 3   Team roles are positively related with team processes.

Test: Linear regression

Level of significance: α =0.05

Table 7: Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig F Change
						Change Statistics			
1	.851[a]	.724	.722	.4637	.724	283.988	1	108	.000

c. Predictors (Constant), Team Roles
d. Dependent Variable: Team Processes

Table 8: ANOVA Results

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	61.083	1	61.083	283.988	.000[b]
	Residual	23.230	108	.215		
	Total	84.313	109			

a. Predictors (Constant), Team Roles
b. Dependent Variable : Team Processes

R square is .724 which indicates that 72.4% part of team processes is explained by team roles and shows significant positive relationship, F=283.988, p value=.000<.05 (Level of significance: α) therefore, hypothesis team roles are positively related with team processes.is supported (see table7&8).
Hence all three hypotheses are supported.

4. Limitations:

i.   This study was limited to the various project teams of IT organizations only. Further research can be carried out in other sector project teams to understand the complex nature of team dynamics.

ii. The sample size was limited to 110 respondents only.

iii. This study incorporates the influence of only four variables of the Measures of Teamwork Effectiveness. There are other variables, such as self-knowledge of team members, commitment, flexibility, work culture, problem solving, leadership, etc., also set the scene for effective teamwork. Therefore, future research can incorporate the influence of these factors with a larger sample and more sophisticated data analysis techniques.

5. Conclusion:

This study has given us insight into how team outcome elements influence team performance. The study's objectives were to examine the constituents of team effectiveness and to establish the relationship between team effectiveness variables and their interdependence which is proved through statistical analysis. Thus, it is concluded that teamwork is a complex phenomenon and team effectiveness dimensions, i.e. team purpose and goals, are positively related to team relationships; team roles are positively related to team processes, and the team effectiveness components(team purpose and goals, team role, team process and team relationship) are interdependent. Thus the relevance of the team effectiveness dimensions established by Larson & LeFasto (1989) was found to be in sync with previous research and demonstrating the applicability in today's corporate environment, which is undergoing a dramatic shift (Pandey & Pattnaik, 2016).

There is a strong body of research that has produced a plethora of useful knowledge about how to enhance team performance (Kozlowski & Ilgen, 2006). Supportive team culture and optimal individual contributions is the foundation for effective teamwork. As the industry continues to utilize teams, team-building may enhance team function more successfully and be more rewarding to group members (Fapohunda, 2013). Employers may benefit from not only training but also selecting staff and management for team skills and attitudes. Teams have the capacity to be the significant drivers of organisational success today. However, high performing teams are not readily formed; it takes effort and time to develop these teams. The level of commitment and dedication of each member of the team impacts the overall competence of the team. Each factor stated above, viz. team purpose and goals, team roles, team processes and team relationships have a big role in developing high performing teams.

Activities which improve trust, understanding, and members' appreciation are necessary to boost team spirit, which will impact the team's effectiveness. Management and teams need to create and implement activities to improve team outcomes (Fung, 2014).

Although working on team-based projects is encouraged to cope with the complex and contemporary work environment and teamwork has become a necessity in this contemporary world, the importance of other factors like work culture, leadership, and management support cannot be ignored in developing effective teams. Workplace resilience has been considered an essential asset for enhancing team performance and the well-being of employees in this contemporary world. Resilient team members can effectively deal with uncertainties and stressors at the workplace.

Finally, there is a need to build and maintain effective teams to maximize team productivity. Enormous interest generated by topics related to work teams, as the new arena of organizational

management, signals an excellent and hopeful future for research in this field. More research is needed on how to develop resilient work teams in organizations.

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