



ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΕΙΡΑΙΩΣ
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MSc Project Management & Product Development

**Thesis: Management of dynamic project teams in knowledge-intensive
organizations**



Professor/ Supervisor: Konstantinos C. Kostopoulos

Postgraduate Student: Sotiria Kontou

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STATEMENT

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ABSTRACT

Efficiency of project management is a very actual topic among key executive managers in the information technology industry. Moreover, investigating how different project management approaches influence the performance and motivation of employees, is a subject of interest of many leaders and managers. Considering a team as a fundamental unit of a company brings new views and approaches to standard managerial methods. In the first part of this thesis, a continual description of key elements is included that affect the team, and as a result, the influence in the general performance of this team. The second part of this thesis contains an in-depth analysis of various project management measures through a survey, which was answered by several members of teams in organizations intensive to knowledge and technology in order to check which factors affect the performance of a project team. Furthermore, detailed results of the analysis are included in this thesis, using SPSS tool in order to identify which measures and models play more important role to the team learning and especially team performance. Finally, it is mentioned the conclusion of this thesis and some outcomes for future analysis.

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DEDICATION

This thesis is dedicated to my family and many friends. A special feeling of gratitude to my loving parents, whose words of encouragement and push for tenacity, ring in my ears every day & a big thank you to my brother who is always in my side and support me in every step and decision that I make.

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1. Problem Statement

Project teams are created in order to work into a new project in a firm. The goal is for a team to present its desirability of cooperative relationships through project performance. To secure that teams successfully complete their projects, it is necessary for companies to promote, measure, and evaluate their teams' effectiveness. By all means, it is a challenging task to perform, but there are underlying reasons why companies need an effective measurement system for teams.

The problem that arises is how some factors affect the strategic structure of a company with its influence and the way the project team will be created in order to work effectively and succeed its goals. Thus, it is created the question how should be a team, so that its members perform better in relation to their colleagues and its company's strategy according to the project. Many researchers and project managers are facing a paradox: Although there are numerous effective measurements for teams, it is difficult to identify how these measures must combined in order to have better results in cooperation of a team to succeed its goals. Since teams comprise individuals with diverse backgrounds, each possesses a unique set of requirements he/she wishes to achieve. Cohen and Bailey (1997) indicated it is often impossible for researchers and managers to compare teams in different functional areas, departments, or facilities. Therefore, it is crucial for team leaders to determine the best way to ensure all team players' expectations are aligned with the overall project's goals and objectives. Busseri et al. (2000) suggested it may be useful for team members to reflect on how well they are working together from time-to-time. This can be addressed by conducting assessment and evaluation among team members and by the project owner on what they think is working well, what is not working well, and how it can be improved.

2.Purpose of the study

The purpose of this study is to determine the role of team effectiveness in projects and general on the overall team and project performance. Therefore, it is the aim of this study to help project managers to develop highly effective project teams through identified factors that contribute towards a project's success, by means of conducting a series of evaluations and assessments using the new team effectiveness assessment tool. This study also seeks to provide an understanding on what team effectiveness means to people of firms.

This study examines different factors that associated with team effectiveness and the relationship between the team effectiveness factors and project performance aspects. Quantitative and qualitative research methods are used for this study, as a survey related to team effectiveness and project performance has been developed to use for data collection. These data were analyzed using several statistical tests, including Analysis of Variance (ANOVA) and linear regression. Additionally, definitions of team effectiveness in project teams which are developed, is based on the perspectives of project team members and project managers. The survey that I developed, is intended for assessment and evaluation of project teams in order to maintain their effectiveness level throughout the project phases. The outcomes from this study are anticipated to provide project teams with the ideas on the factors that need to be focused in order to improve team effectiveness on project performance aspects.

3.Introduction

In this thesis, I am going to analyze the different types of teams, the frameworks of teams' effectiveness and also to focus on most important criteria which influence the team effectiveness and how.

Work Teams Definition

Members 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.

According to this definition, organization context influences the function of work teams even if these teams have many differences in team size, group composition and other characteristics. A theme that it is analyzed throughout this review is that different types of teams face different demands and thus function differently; another fact is that there is much heterogeneity within team types as there is across types of people. Consequently, we focus our attention on what we consider as substantive issues rather than types of teams. Before analyze anything else, it is useful to explain the following characteristics of a team.

Team size

The size of a group is measured by the number of (usually full-time) members who work together to achieve the group's goals. Groups may conclude from three to more than 20 members. Group size is an important characteristic which determines how group members behave.

Potential Advantages of Smaller Groups	Potential Advantages of Larger Groups
<p>Interactions among group members are more frequent.</p> <p>Information is more easily shared among group members.</p> <p>Group members recognize their contributions to the group.</p> <p>Group members are motivated and committed to the group's goals.</p> <p>Group members are satisfied.</p>	<p>Group has many resources at its disposal to accomplish its goals, including members' skills, abilities, knowledge, and experience.</p> <p>Group can have a greater division of labor, so group members focus on particular tasks.</p> <p>When group members focus on particular tasks, they generally become skilled at performing them.</p>

Figure 1 Advantages of small & large teams

In conclusion, the size of a team plays an important role in the success of the team and also it depends on the type of project or task that team is going to deal with.

4.Literature review

Team Effectiveness Framework

There are two important frameworks (IPO & IMO) for measuring team effectiveness. The input-process-outcome (IPO) framework created by McGrath (1964) (Figure 2). Inputs includes factors that allow and restrict members' interactions. These include individual team member characteristics (e.g., skills, personalities), team-level factors (e.g., task structure, external leader influences), and organizational factors (e.g., organizational design features, environmental complexity). All these factors combine to initiate team processes. Processes are vital because they symbolize the alternation of inputs into outcomes. Outcomes are results and by-products of team activity. For example, team performance (e.g., quality and quantity) and members' affective reactions (e.g., satisfaction, commitment, viability).

This approach reports the multilevel nature of teams, as individuals are members of a team, which in turn exist in an organization. This categorization suggests that organizational factors influence the nature of leadership practices and as a result this affect team performance and effectiveness. In general, higher level factors usually influence lower level factors.

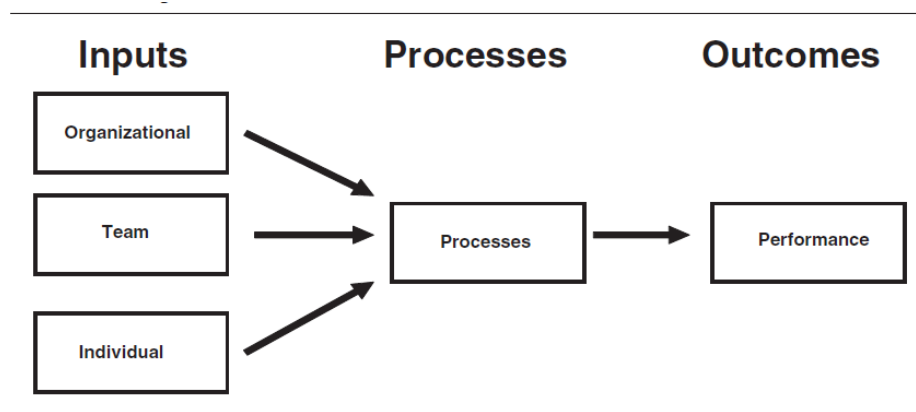


Figure 2: IPO Team Effectiveness Framework Mathieu et al. / Team Effectiveness 1997-2007

However, Marks, Mathieu, and Zaccaro (2001) noted that team processes involved members' actions, whereas other mediating mechanisms are better conceived of as cognitive, motivational, or affective states. (e.g., potency, psychological safety, and collective affect). Given this development, Ilgen et al. (2005) coined the phrase input-mediator-outcome (IMO) model (Figure 3) to differentiate this approach from the standard IPO framework.

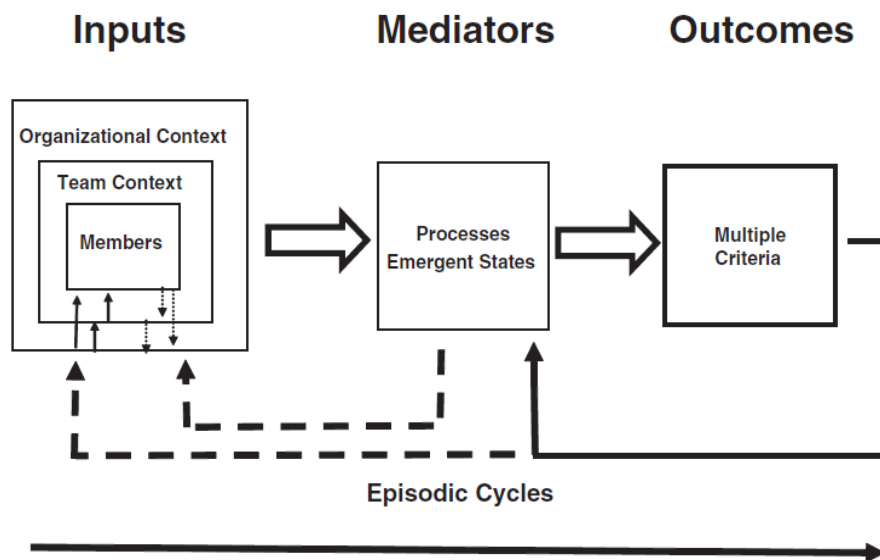


Figure 3: IMO Team Effectiveness Framework Mathieu et al / Team Effectiveness 1997-2007

Many researchers have also emphasized that time plays a critical role in team functioning.

There are mainly 2 approaches:

- (a) Developmental models which analyze how teams change as they mature over time.
- (b) Episodic approaches which infer that teams must execute different processes at different times, depending on task demands.

Another important factor of improving the effectiveness of a team is the feedback loop that represent the more cyclical or episodic processes, which some authors named it as

IMOI framework (input-mediator-output-input) to represent the inherent cyclical nature of team functioning.

The solid line from outcomes to mediators (Figure 3), suggests the feedback.



Figure 4: The way to success

Team Outcome

The outcomes of teams are consisting in three categories: performance, attitudes, and behaviors according to Cohen and Bailey (1997). The main use of teams is to perform tasks and performance. Interestingly, in teams' research the focus is mainly on who is a member of the team, how they cooperate, and what they do to perform their work and this can be found with measurements. Whereas there are many valid measures of inputs, processes, and emergent states, criterion measures, and in particular performance indices, are often idiosyncratic and organizationally specific. Accordingly, we discuss outcomes in terms of traditional broad classifications, yet also identify fruitful areas concerning work team effectiveness criteria.

Team Performance

Team performance is a very important criterion because it is claimed that the definition of a team is that they produce something useful to an organization. It contains three subcategories:

- (a) Organizational-level performance is relevant for top management teams (TMTs) where there is a one-to-one alignment between team characteristics and organizational outcomes, which is usually positive for TMTs. However, this isn't occurring when teams operate at lower level analysis as it will be difficult to derive a direct linkage, for example, between teams of maintenance workers and organizational outcomes.
- (b) Team performance behaviors and outcomes. Behaviors are actions related to the achievement of goals, whereas outcomes are the consequences or results of performance behaviors (e.g. team process improvement, learning behaviors, and cognitive task performance). Team process get improved by measuring feedback seeking, error discussion, and experimentation, which lead to lessons-learned and improvement.
- (c) Role-based performance. Role-based outcomes indicate the extent to which members exhibit the requisite competencies necessary to perform their jobs. This approach is used to examine whether teams are competent with regard to their task, team, organizational roles and the time that they need to integrate according to his role.

Members' affect & sustainability

Members' affective reaction and sustainability outcomes are also two important criterion measures. However, sometimes these measures create confusion because some people compare them with cohesion of members while other believe that is similar to team membership stability. Thus, these measures have become a generic term for a variety of different constructs. Several studies have tried to use ratings of both viability and affective outcomes and found that they lack discriminant validity from team performance.

Mediator- Team Outcome Relationships

Another important measurement during the past decade is a number of mediators that influence the team outcomes. Mediators are divided into two major categories: Processes & emergent states.

Processes

Team processes were categorized as either "task work" (Functions that a member of a team must complete) or "teamwork" (the interaction between team members. Processes fall into three superordinate categories: transition, action, and interpersonal. During transition phases, team members focus on activities such as mission analysis, planning, goal identification, and formulating strategies. Later, during action phases, members concentrate on task accomplishments, monitoring progress and systems, coordinating team members, as well as monitoring and backing up their fellow team members. Processes such as communication & coordination play an important role in team performance, increase team innovation and the accuracy of their decision making. Last but not least, the interpersonal category includes conflict management, motivation building, and affect. It is found that both relationship & task conflict have negative results

in team performance & member satisfaction. However sometimes it helps teams to have different opinions and increase diversity and innovation within a team. It is also important to infer that feedback has a positive impact on motivation & interpersonal trust.

Moreover, it is important to mention that even if processes have a significant role in team effectiveness models, researchers should consider providing multiple types of processes and take a few measures in order to have a clear view about the team outcomes.

Emergent states

The emergent states conclude confidence, empowerment, climate, cohesion, trust, and collective cognition within a team.

Team confidence

The team confidence category of emergent states includes two constructs—team efficacy (how confident are the members of a team when execute courses of action required in order to succeed some goals. *Potency*, on the other hand, is generally defined as a collective belief regarding the team's ability to be successful. Distinction between the two is that *efficacy* relates to the team's belief that it can be successful on a *specific* task whereas *potency* refers to a team's more *general* sense of its capabilities in relation to various tasks and different contexts.

Team empowerment

Team empowerment is analyzed in 2 subcategories: *Structural*, which combines the impact of team responsibilities and norms with the final performance of team. *Psychological empowerment* which focus on work environment and team's functioning. It is known that psychological empowerment is strongly related with the individual's performance which in turn influence the team effectiveness.

Climate

Climate is another subcategory of emergent states which alludes to the norms, expectation and attitudes that members of a team should follow and how all these factors influence their effectiveness. There are some categories of climate such as safety (prevention of errors), service (customer satisfaction) and justice climate (self-esteem and personal satisfaction) in every organization. All these factors influence both homogeneity & heterogeneity teams and if every team perceive the procedures of an organization, the results of teams would be impressive.

Cohesion

Team cohesion plays an important role to the overall performance of a team as it is very difficult for a team to deliver a project when their members cannot communicate & collaborate each other. A potential factor that influence the cohesion of a team is its size. The smaller a team is, the better goals and positive results will succeed.

Trust

Another discrete emergent state sentence is trust between the members of a team in order to collaborate and achieve their goals and also to feel autonomous and confident for the results and the performance of the team.

Collective cognition

Teams inclined to solve problems in the most projects. The complexity of these problems has exceeded the cognitive capacity of any individual and requires a team of members to solve them. The success of solving these complex problems relies on team's collective cognition.

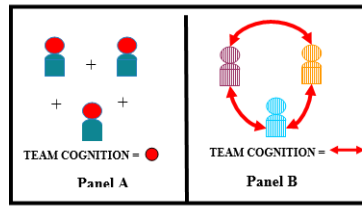


Figure 5: Team Cognition

1. Shared mental models (SMMs). These models have used to explain team functioning. The idea of this is that team performance improves if team members have a shared understanding of the task that is to be performed and of the involved team work. It is found that team interaction, meetings, trainings and manager briefings would enhance the team spirit and as a result the effectiveness of team.
2. Strategic consensus. A frequent complaint of senior executives is that middle and operating managers fail to take the actions necessary to implement strategy. It is very important within an organization to have shared understanding of strategic scope and priorities in order to have successful results according to their goals.

However, there are also Blended Mediators which are ranked as both processes & emergent states such as team learning, behavioral integration and transactive memory which affect the team effectiveness & efficiency.

Team composition inputs

Group composition refers to the characteristics of members of a team, such as age, sex, nationality, educational background, work experience and personality. These characteristics may be taken into account, though one can never be sure what mixture will

lead to good participation according to the nature of the project and organization. Individual members will contribute differently according to which other members they are grouped with: there occurs what is known as an "assembly effect" - a kind of convergence of needs and behaviors, which is often difficult to predict.

Homogeneous & Heterogeneous groups.

Homogeneous teams have many common characteristics in contrast with heterogeneous groups which are characterized by diversity. Some of their advantages is their transparency of sharing knowledge and information & the low levels of conflicts. On the other hand, Heterogeneous teams make usually good decisions and brainstorming because of their diversity and last but not least they have variety of resources & knowledge area which leads on a high-level performance.

Team composition plays an important role in the effectiveness of a team, as it focuses on features of their members, how these attributes is combined and what impact have in the processes and in turn in outcomes/ performance of the entire work team. Below we are going to refer some of these inputs, such as **mean values** (personality, competencies and other attributes) and **team members' diversity**.

It is found that higher levels of interpersonal sensitivity, agreeableness, curiosity, openness to experience and emotional stability of members lead to more-cohesive teams and increased social behavior among team members. More-effective teams were composed of a higher number of cool-headed, inquisitive, and altruistic people. A useful way to think about teams with the right mix of skills and personalities is to consider the two roles every person plays in a working group: a functional role, based on their formal position and technical skill, and a psychological role, based on the kind of person they

are. Too often, organizations focus merely on the functional role and hope that good team performance somehow follows. It is very important to have a combination of these two factors in order to end to positive results. The interaction between members requires a specific set of communication, conflict resolution, cooperation and teamwork. All these factors lead on better execution of tasks and processes within a team. As a result, members gain a high-level knowledge according to tasks which are assigned to them and work as a cohesive team in order to have better results.

Diversity factors such as demographic, functional background, personality and attitudes, either isolated or combination of these factors, influence heterogeneous teams and have impact on their performance. It is important to mention that these factors may influence negative or positive the performance of a team because it depends on the nature of the project, the organization climate and duration of work. Sometimes age & skills diversity help team to think from different perspectives and increase the level of brainstorming and clever ideas in a team. However, members should have also some common features to fit in the same team and cooperate, otherwise there could have relationship conflicts and perhaps negative results. Researchers have found that interpersonal functional diversity lead to drawback outcomes, in contrast with average intrapersonal which have mostly beneficial results. Thus, many authors claimed that project teams should consist of people who combine many different characteristics.

Position and status issues

An important assumption in the creation of a team is that a single individual, such as the most intelligent team member, can have more influence on team's decisions. For instance, researchers argued that in disjunctive tasks (e.g., problem solving), team performance is

affected by the smartest member, whereas in conjunctive tasks (e.g., assembly line), the capabilities of the weakest member tend to decrease the overall performance. Therefore, the position & status of every member within a team plays significant role in final performance of team. Teams should use their member in the right position if they want to work efficient.

Network features

Network features associated with teams focuses on the social connections (i.e., ties) that link members between and within teams. Factors according to individuals in specific network positions within a team can influence outcomes at the team-level, for instance, focused on criticality and found that the knowledge held by critical team members that help for effective team functioning. Teams with strong ties appear higher levels of goal attainment and were more likely to remain together as compared to teams with sparse network ties. Centrality provides to teams with advantages in terms of assignment and applying resources.

Team level inputs

There are five potential subcategories of team level inputs that influence team performance (mediators and outcomes).

Interdependence

Interdependency among members in pursuing collective performance objectives is a defining characteristic of any real team (Cordery, 2003; Hackman, 2002; Levi, 2001). Yet, it also has implications for the nature of capability beliefs at the team level. In forming team-level capability beliefs, team members collectively consider the personal

resources in the team and the potential of the team to integrate its resources by means of internal collaboration. Team members' level interaction is built by their skills and the way that they share resources, technology and knowledge. Another factor that affects team performance is the level of recognition (rewards and feedback) that members receive. It is observed that cooperative outcome of team efficient depends on the level of information sharing & learning between members.

Technology/ virtuality

The rapid technology advancement leads to the establishment of virtual teams into organizations. More and more firms incline to create virtual teams than the traditional face-to-face model of teams and this phenomenon is more common to international organizations. Virtual team members collaborate and work together from separate locations by leveraging technology, for instant web conferencing, Lync, WebEx, online project management software, etc. which makes their communication faster. On the other hand, Face-to-face meetings allow multiple channels of communication such as body language, touch, subtle changes in one's tone of voice all disappear or diminish when communicating electronically and communication plays primary role in teams' interaction and performance. It is argued that dimensions like geographic dispersion, electronic dependence and national diversity usually have negative effects on the cohesiveness of a team and by extension on their final performance.

Team training

Trainings play vital role on the performance of a team. However, it should be mention that questions like what to train, how should you do it and when influence differently the final result of team efficiency. It is argued that training teamwork skills, or those focused on the behaviors and attitudes is better delivered in intact teams instead of individual

members, because teams function more effectively when trainings are interactive and are referred to the entire team and they understand better their task-role and how to cooperate in order to achieve their common goals. Moreover, training intact teams provides equal knowledge and opportunities for members to integrate their teamwork skills, limit the sense of competition & jealousy within team and get practice in complex coordinated actions. Online training plays also an important role in team's performance and help them learn easier and faster and also gain knowledge. However, more research is needed to prove which type (online or classic training) has more impressive results regarding to achieving team goals. Many companies provide embedded system of trainings to their employees either to individual or team level and it is believed that this perspective may offer in long-term better outcomes for team performance. It is significant, trainings not be a tick in the box for their members. On the contrary, it should provide fruitful information and best practices to the members of a team.

Team leadership

Lack of leadership often creates barriers to a team performance. External and formal leadership represents formally assigned leaders who are not members of the team (i.e., do not perform any of the team's day-to-day tasks). Such leaders are often called team sponsors, coaches, or advisors. Internal and informal leadership occurs when leadership responsibilities are shared among team members or when certain team members emerge informally as a leader. Although the source of team leadership can vary, all sources should focus on satisfying team needs with the goal of enhancing team effectiveness. It is argued that the actions of an external team leader can make or break their success. Leadership is considered as an input factor that affect processes, emergent states and performance of a team. External leaders are important because they provide ideas, function as coordinators

and guides for setting the team’s vision. Team coaching, on the other hand, is an internal type of leadership who use more collaborative methods to involve all team members, manage conflicts and build commitments within team. Nowadays it has been an increasing acceptance of the idea that leadership does not only stem from an external individual in a top-down process, but can also emerge from within the team itself. This option of leadership has also positive influences on team member relationships and empowerment and as a result, better team performance.

Team structure

Functional team departmentalization is a method for separating the activities performed within an organization into groups differentiated by the function they perform.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Provides logical reflection of functions maintains power and prestige of major functions. • Follows principle of occupational specialization. • Simplifies training and supervisor of the subordinates. • Furnishes means of tight control at top. • Each department can be staffed by experts in that functional area. • Coordination of activities within the departments is easy. 	<ul style="list-style-type: none"> • Decision making becomes slower and more bureaucratic. • De-emphasis of overall company objectives. • Accountability and performance become increasingly difficult to monitor. • Overspecializes and narrows viewpoints of key personnel. • Reduces co-ordination between functions or departments. • Responsibility for profits is at the top only. • Slow adaptation to changes in environment. • Limits development of general managers.

Figure 6: The advantages & disadvantages of functional team structure

Divisional team departmentalization

A divisional team structure organizes individuals within teams according to the geographic area served or the specific product that are responsible for. These teams are mostly self-managed and focused upon a narrow aspect of the company's products or services.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Cohesiveness between the small groups of employees working in each geographic department • Logistically, it is effective. Each location was in charge of managing and tracking their financials, employee hours, customer data etc. • Structure allows all employee to focus on their location's services. 	<ul style="list-style-type: none"> • It is difficult in terms of company culture. There are separate cultures among each division, which depreciates from the whole company's culture. • Lack of communication between employees among the separate locations. • Competition between locations

Figure 7: The advantages & disadvantages of divisional team structure

It is found that teams are likely to have better results when transitioning from a functional to divisional structure rather than the reverse.

Pair-based team structure

In the pair-based structure, role partners are created in order to motivate members to share expertise and responsibilities. It is argued that teams with a distributed workload learned more than teams that overloaded individual members, and teams utilizing a paired structure learned more than teams structured either functionally or divisionally.

Organizational Contextual Inputs

The organizational contextual variables are sources of influence that are external to the team, yet emanate from the larger organizational system within which they are nested. In contrast with environmental contextual variables which are sources of influence that emanate from outside of the organization yet influence team functioning.

Organizational contexts

Openness climate

Climate of openness is one of the main conditions for building an environment of “psychological safety” among teams. The leader of team should clearly “walks the talk”

in demonstrating that both failures and successes are opportunities to continuous improvement through shared lessons learned. The leader models' behavior by owning his team's mistakes, and doing something about them. If the climate in an organization and more specific in a team is good, this could improve the results and the general performance of the team.

Multiteam systems coordination

Multiteam systems (i.e., teams of teams) are frequently used to deal with complex and demanding challenges that require several teams' joint efforts. However, achieving effective horizontal coordination across component teams in these systems remains difficult. It is argued that horizontal coordination between component teams can benefit if a multiteam system is composed of generalist members who are acquainted with the multiple functions present in the overall system

Environmental context

Cultural influence on teams: Culture is the foundation from which we derive our internal values and attitudes. Cultural differences in teams have usually negative effects on their performance, when team members and leaders fail to appreciate the importance that culture can have on member behavior. The dimension of culture, requires a great deal of sensitivity and awareness, not only by the leader but by all of the team members to the issues faced by co-workers from other countries and cultures who may not speak the same language in order to succeed their goals.

Summary Impressions from Literature review & Future Directions for the creation of survey.

It should be considered using measures in which all dimensions be relevant to the subsequent organizations, focusing in specific settings of a team in order to define clear outcomes of team performance & effectiveness and in turn to the hole organization performance. Therefore, it is very important to define the correct measures that we are going to use according to the nature of the team and the strategic/ organization structure of its company. Another factor that we should consider, is the aggregation of data and the processes that a team use to transfer knowledge and information from individuals to the team and then to the entire company, as it is very important for a team to use processes that lead to succeed their goals.

Considerable Research effort have been invested in understanding how to create and develop teams that work effectively. Although research on team learning has developed somewhat independently from research on individual level variables & processes, many researchers claimed that these two measures are strongly related for the effectiveness of a team output.

Considering the information given from literature review, I made a research in which measures it is believed that play crucial role to the performance of a team according to several authors. Thus, a table (Table 1) has been created, as you can see below, in order to end up to the measures and respective questions that I am going to use in the survey.

Table 1: Comparison of authors beliefs related to the factors that influence team performance

Factors	Adelman (1987)	Driscoll et al. (1987)	Salas et al. (1998)	Spurr (1998)	Shamir (2001)	Rabier et al. (2001)	Blendel et al. (2001)	Adam et al. (2002)	Mathieu (2007)	Parker et al. (2008)	Ross et al. (2008)	
Interdependence	x								x	x		3
Informal Learning	x		x			x	x	x	x	x		4
Virtuality/ Technology									x			1
Trainings	x		x	x	x		x		x	x		6
Team Leadership					x						x	2
Team size												
Team Learning Behavior		x		x		x		x	x			5
Organization Factors												
Supportiveness of organization context							x			x	x	3
HR systems/ practices									x			1
Openness climate		x		x				x	x	x		5
Multiteam system coordination			x	x	x	x	x		x			6
Environmental Factors												
TMT environment interface		x							x			2
Cultural influence				x					x			2
Processes												
Transition	x			x					x			3
Action		x	x			x			x	x	x	6
Impersonal				x				x	x			3
Mediators/ Emergent states												
Confidence	x					x			x		x	4
Team transactional memory												
Empowerment		x			x				x			3
Climate	x		x	x	x		x	x	x	x	x	9
Cohesion	x	x		x		x		x	x	x	x	7
Trust	x	x	x	x	x	x	x	x	x	x	x	10
Shared cognition			x		x		x		x		x	5
Performance												
Organizational performance	x			x					x			3
Team performance	x	x	x			x		x	x	x	x	9
Individual/ Role based performance	x		x	x					x			4
Members' affect & sustainability	x	x			x		x		x	x		6

5. Hypotheses

Given the high interest in teams, it is remarkable that there are few descriptions of interventions designed to develop work teams (Kozlowski & Bell, 2003). Most of the work on this topic has been shaped by (e.g., Cannon-Bowers, Tannenbaum, Salas, & Volpe, 1995; Kozlowski, Gully, Nason, & Smith, 1999) stage models of development. Some authors (e.g., Mathieu et al., 2007). indicate that individual level variables such as informal learning, team learning behavior & supportiveness of organization affect the effectiveness of a team. First of all, the range of personality factors being considered has been extended beyond the Big Five to include achievement orientation, dependability (LePine, 2003),

Research have shown that it is very important for a team to work together and feel that working on that team help members to learn and acquire new skills & knowledge though

their colleagues. (Mathieu, Journal of Management 2008) In addition, organization support such as training, good earnings and good working environment, helps teams to increase their wiliness for work and their psychology, resulting in an efficient & effective result. The performance of a team is usually associated with a sense of personal fulfillment.

Hypothesis (1): Individual-level variables are positively related with team learning

Some authors argued that different team processes are critical at different phases of task execution. There are three categories of processes that occur at any time during a project which are: transition, action & interpersonal.

Transition processes (i.e., mission statement, goal orientation, strategy, and planning) have been proven to contribute to performance through factors such as the use of time management, planning of the project and deliberate plans. In addition, transition processes should create preventative plans in order to be prepared for next steps/ actions, all of which are associated with team learning. During such reflection periods, team members should discuss openly in order to find out if there are gaps in their final plans and make the appropriate changes. The proactiveness of this phase helps team to be aligned with their goals and increase the understanding of roles and responsibilities of members. We also submit that when teams actively work to specify goals, formulate strategies, and efficiently execute them, they are more likely to plan for employee growth and to demonstrate a climate that signals efficiency, productivity, and development.

Action processes (i.e., monitoring resources, teammate back-up behavior, progress toward goals, and coordination) frequently have been examined and found to relate

significantly to a variety of team outcomes such as performance and emergent states (e.g., cohesion, potency), in both individual studies. The action process is the phase of the team's performance cycle where members focus on activities that directly contribute to accomplishing their goals. In addition, processes resulting in efficient coordination, evaluation, and goal progress will likely increase one's team commitment.

Research on interpersonal processes (i.e., conflict management, confidence, and motivation building and emotion regulation) has shown positive team performance and member satisfaction as a result of decreased conflict and increased motivation and interpersonal trust. A definition of team learning as an ongoing process of reflection and action, characterized by asking questions, seeking feedback and experimenting and is proposed by Argote, Gruenfeld, and Naquin (1999) as transition, action and interpersonal processes which has as a result interaction activities through which individuals acquire, share and combine knowledge. This approach focuses on the processes and leaves outcomes of these processes to be investigated separately. Opportunities for informal learning are expected to be influenced by the relationships an individual has with coworkers.

Hypothesis (2): Team processes are positively related with team learning

- a. Transition processes are positively related with team learning
- b. Action processes are positively related with team learning
- c. Interpersonal processes are positively related with team learning

Positive work environments that are free of dysfunctional conflicts and that have high levels of trust should provide ample opportunities for constructive feedback and team

learning. Existing research has demonstrated the positive team-level results of well-orchestrated. For example, Levitt and March (1988) conceptualized organizational learning as an outcome of a process of organizations “encoding inferences from history into routines that guide behavior” It is also known that the value of organization support plays an important role to the team learning because if for example a company organize many trainings for their employees and help them to improve their skills, this will have as a result to have better psychological safety for themselves, which affects positively on team learning because members of a team will have the opportunity to gain additional knowledge which they will use and transfer though their own team. In addition, many researchers have included that structure and design, including equipment, physical environment and payment, are the most important variables for improving work-team performance (Goodman, Devadas, and Hughson 1988, Cohen and Ledford, 1994)

Hypothesis (3): Supportiveness of the organizational environment is positively related to team learning

Many characteristics have been used to creation of a team composition such as the level of team learning. However, there are mixed opinions about team learning as usually has both positive and negative results. At the beginning of team learning, members usually focus on learning and less on their task and this could impair their final performance. On the other hand, long-lasting team learning orientation & lessons learned could lead to high level task-related knowledge and enhance the overall team performance. Nowadays an increasing number of studies have focused the impact of team learning on team performance. (Lindsley, Brass and Thomas, 1995) Research has shown that the performance of a team depends on the team learning which includes questions,

experimentation, discussion, brainstorming & lessons learned to a team. (Albanese, R., and Haggard, R. 1993). Sometimes all these activities help team to promote effective performance.

Hypothesis (4): Team learning is positively related to team performance

6.Methods

Sample & procedure

To test our hypotheses, a survey was created. In this survey, several different teams completed a questionnaire that raised questions about the effectiveness of team performance. In particular, I collected information about the effect of control variables, Individual-level variables, processes and some moderators to the final team performance.

Using a sample of 96 individual from 37 teams of high-tech companies such as IT, banking & insurance companies (Cisco, Microsoft, IBM, Nokia, Infineon, Alpha bank, CBRE, startups etc.)

For a team to be included in the final sample, at least two team members had to complete the questionnaire. Respondents should have chosen to answer about a recently completed project. Team size ranged from 3 to 40 members with an average of 7.51 members. The period team members had been working together ranged from 1 to 36 months with an average of 10.2 months. The sample consists of 96 people, of whom 25 were Project Managers. A number of 30 women and the 66 men participated in the survey. Moreover, 44 from the participants are aged from (30-49years), 48 from the sample has age from (18-29years) the remaining t sample is over 50.

Prior to collect the data, I took several steps to ensure participants' commitment to the study. First of all, participants had to include a project code in order to be easier to identify the members of a team in the final data collection and to ensure that the answers fit in

specific projects. Moreover, a cover letter was included in order to inform them for the scope of this survey & gave them instruction of the questionnaires with a brief explanation of the questions. To ensure anonymity it was asked from the respondents not to use their real name of projects.

7.Measures

All items were answered with individual- and team-referenced, 7-point Likert-type response scales.

Individual-level variables

Informal learning: Often it is referred to as learning by experience or just as experience. In the survey, there were 5 questions related to this measure and the respondents rated each statement on a 7-point Likert scale (1: strongly disagree to 7: strongly agree). E.g. *“My skills had increased as a result of working on that team.”* (developed by Kukemberg 2013)

Team learning behavior: There were 7 questions related to this measure and the respondents rated each statement on a 7-point Likert scale (1: strongly disagree to 7: strongly agree). E.g. *“It took time to figure out ways to improve our team’s work processes.”* (Developed by Edmonson 1999)

Supportiveness of organization context: Questionnaire includes 5 questions related to organizational support which was also rated on a 7-point Likert scale (1: strongly disagree to 7: strongly agree). E.g. *“That team got all the information needed to do our work and plan our schedule.”* (Developed by Edmonson 1999)

Team-level Processes

In addition, survey included 12 questions according to the processes and respondents should rate each question on a 7-point Likert scale (1: strongly disagree to 7: strongly

agree). More specific there was 4 questions for each of category of process (transition, action and interpersonal)

E.g. Transition: *Team members discussed our performance vision.*

Action: *Members of my team took the time we needed to share task-related information*

Interpersonal: *Members of my team created an environment of openness and trust.*

Team performance

As in other research on work teams (Alper et al., 2000; Cohen & Ledford, 1994; Somech, 2006), in this study as well obtaining objective work outcome measures proved impossible, despite the willingness of the organization to provide such measures. The questionnaire consists of 6 categories related to the team performance and each respondent had to rate their team on 6 different dimensions such as efficiency, quality, productivity, mission fulfillment, work excellence and satisfaction of working in this team (1=poor to 7=excellent).

Controls

It has been also used some control variables such as Gender, Size of team, Age, Project duration, Position/ Role in the team in order to know some additional information for each project.

8. Level of analysis

After the completion of survey, we collect 96 answers from 37 different teams. These results, translated to code numbers in order to become an input for the SPSS analysis. The level of analysis that we analyse in this survey is the team level and we have listed some hypothesis that I tested later in the SPSS analysis and made different scenarios with changes to the dependent & independent variables. Below the results of these scenarios will be analysed.

9. Results

Team Learning as the Dependent Variable

Using Team learning as dependent variable and control variables, individual learning, processes and organization support as independent (see below), the first model of analysis has been created:

Table 2: Descriptive Statistics

Measures	Mean	Std. Deviation
Ind. Team_Learning_Behavior	4.2366	.97020
1. Gender	.2917	.45692
Team_size	7.5104	7.50578
Age	1.5000	.54290
Project_Duration	10.1979	9.76203
Team_role	.2604	.44117
2. Informal_Learning	5.2104	1.30210
3. Transition_Processes	4.5859	1.19474
Action_Processes	4.9635	1.21123
Interpersonal_Processes	4.9792	1.25377
4. Support_of_organ_context	4.0104	.89272

N:96 answers

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.315 ^a	.099	.049	.94609	.099	1.981	5	90	.089	
2	.646 ^b	.417	.378	.76540	.318	48.507	1	89	.000**	
3	.713 ^c	.508	.457	.71505	.091	5.326	3	86	.002*	
4	.783 ^d	.613	.568	.63772	.105	23.120	1	85	.000**	2.081

Table 3: Model Summary

- a. Predictors: (Constant), Team role, Team size, Gender, Project Duration, Age
- b. Predictors: (Constant), Team role, Team size, Gender, Project Duration, Age, Informal Learning
- c. Predictors: (Constant), Team role, Team size, Gender, Project Duration, Age, Informal Learning, Transition Processes, Interpersonal Processes, Action Processes
- d. Predictors: (Constant), Team role, Team size, Gender, Project Duration, Age, Informal Learning, Transition Processes, Interpersonal Processes, Action Processes, Support_of_organ_context
- e. Dependent Variable: Team_Learning_Behavior

As we can see in this Table 3 from Sig. F Change column, the only variables that do not affect our dependent variable (Team learning behaviour) are the controls.

Testing the hypothesis

The first hypothesis stated that individual variables, which means informal learning is positively associated with team learning. Zero-order correlations provide an initial assessment of the hypothesis. To test this hypothesis, we conducted a hierarchical regression analysis. The control variables (Gender, team size, age, project duration and team role) were entered in the first step and informal learning was added in the second step. The analysis showed that the effect of informal learning on team learning is positive and significant ($\beta=.464$, $p<.01$). Hence Hypothesis 1 is confirmed.

Hypothesis 2 posited that team processes (transition, action and interpersonal processes) are positively related to team learning. Using hierarchical regression analysis, the five

control variables were entered in step 1, the informal learning was entered in step 2, and the three processes were entered in step 3. The results of the hierarchical regression analysis are represented in the table 4 in the third model. According to Table 4, the effect of transition processes on team learning was found positive and marginally significant and ($\beta=.181$ $p<0.10$), the corresponding effect of interpersonal processes was found positive and significant ($\beta=0,261$. $p<0.05$), while the effect of action processes was not significant ($\beta=-0.06$, $p>0.05$). Therefore, Hypothesis 2 was partially supported.

Hypothesis 3 predicted that the supportiveness of the organizational environment relates positively to team learning. The results (Table 4, Model 4) show that organizational supportiveness has a significant positive influence on team learning ($\beta=0.425$, $p<0.01$); thus, Hypothesis 3 is confirmed.

Table 4: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	5.016	.369	13.585	.000	4.283	5.750						
	Gender	-.199	.220	-.094	-.902	.369	-.636	.239	-.059	-.095	-.090	.931	1.074
	Team_size	-.025	.014	-.193	-1.824	.071	-.052	.002	-.218	-.189	-.182	.891	1.122
	Age	-.262	.193	-.146	-1.358	.178	-.644	.121	-.047	-.142	-.136	.861	1.161
	Project_Duration	-.018	.010	-.180	-1.722	.089	-.039	.003	-.220	-.179	-.172	.914	1.095
	Team_role	-.158	.225	.072	.704	.483	-.288	.604	.069	.074	.070	.959	1.042
2	(Constant)	2.166	.507	4.275	.000	1.159	3.173						
	Gender	-.254	.178	-.120	-1.424	.158	-.608	.100	-.059	-.149	-.115	.929	1.077
	Team_size	-.009	.011	-.068	-.773	.442	-.031	.014	-.218	-.082	-.063	.853	1.172
	Age	-.053	.159	-.030	-.335	.738	-.369	.262	-.047	-.036	-.027	.831	1.204
	Project_Duration	-.007	.009	-.067	-.776	.440	-.024	.010	-.220	-.082	-.063	.881	1.135
	Team_role	-.229	.190	-.104	-1.204	.232	-.606	.149	.069	-.127	-.097	.877	1.140
	Informal_Learning	.464	.067	.623	6.965	.000	.332	.596	.620	.594	.564	.819	1.220
3	(Constant)	1.608	.494	3.257	.002	.627	2.590						
	Gender	-.214	.168	-.101	-1.274	.206	-.549	.120	-.059	-.136	-.096	.910	1.099
	Team_size	-.017	.012	-.128	-1.360	.177	-.041	.008	-.218	-.145	-.103	.642	1.557
	Age	-.043	.149	-.024	-.290	.772	-.339	.253	-.047	-.031	-.022	.823	1.215
	Project_Duration	-.003	.008	-.027	-.329	.743	-.019	.014	-.220	-.035	-.025	.835	1.198
	Team_role	-.209	.179	-.095	-1.168	.246	-.564	.147	.069	-.125	-.088	.867	1.154
	Informal_Learning	.218	.095	.292	2.293	.024	.029	.407	.620	.240	.173	.351	2.845
	Transition_Processes	.180	.101	.221	1.777	.079	-.021	.380	.602	.188	.134	.369	2.707
	Action_Processes	-.060	.123	-.075	-.487	.627	-.304	.184	.553	-.052	-.037	.243	4.118
	Interpersonal_Processes	.261	.113	.338	2.308	.023	.036	.486	.594	.242	.175	.267	3.741
4	(Constant)	.685	.480	1.426	.158	-.270	1.641						
	Gender	-.278	.151	-.131	-1.843	.069	-.577	.022	-.059	-.196	-.124	.903	1.108
	Team_size	-.012	.011	-.092	-1.088	.279	-.034	.010	-.218	-.117	-.073	.637	1.569
	Age	-.061	.133	-.034	-.461	.646	-.326	.203	-.047	-.050	-.031	.822	1.216
	Project_Duration	-.002	.007	-.021	-.278	.782	-.017	.013	-.220	-.030	-.019	.834	1.198
	Team_role	-.272	.160	-.124	-1.700	.093	-.590	.046	.069	-.181	-.115	.861	1.162
	Informal_Learning	.251	.085	.336	2.947	.004	.082	.420	.620	.304	.199	.349	2.863
	Transition_Processes	.038	.095	.046	.397	.693	-.151	.226	.602	.043	.027	.334	2.997
	Action_Processes	-.072	.110	-.090	-.661	.511	-.290	.146	.553	-.071	-.045	.243	4.120
	Interpersonal_Processes	.218	.101	.281	2.149	.034	.016	.419	.594	.227	.145	.265	3.771
	Support_of_organ_context	.425	.088	.391	4.808	.000	.249	.600	.600	.462	.324	.689	1.451

a. Dependent Variable: Team_Learning_Behavior

* $p < 0.05$ ** $p < 0.01$

Team Performance as the Dependent variable

Using Team Performance as the dependent variable and control variables, team learning behaviour as independent (see below), the first model of analysis has been created:

Table 5: Descriptive Statistics

	Mean	Std. Deviation
Team_Performance	4.7552	1.26189
Gender	.2917	.45692
Team_size	7.5104	7.50578
Age	1.5000	.54290
Project_Duration	10.1979	9.76203
Team_role	.2604	.44117
Team_Learning_Behavior	4.2366	.97020

N:96 answers

Table 6: 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	.475 ^a	.225	.182	1.14119	.225	5.232	5	90	.000**
2	.681 ^b	.464	.428	.95479	.238	39.573	1	89	.000**

a. Predictors: (Constant), Team_role, Team_size, Gender, Project_Duration, Age

b. Predictors: (Constant), Team_role, Team_size, Gender, Project_Duration, Age, Team_Learning_Behavior

c. Dependent Variable: Team_Performance

Hypothesis 4 stated that team learning is positively related with team performance. To test this hypothesis, we conducted another hierarchical regression analysis. The five control variables were entered in the first step and team learning in the second step. Results (Table 7, Model 2) show that the effect of team learning behaviours on team performance was indeed positive and significant ($\beta=0.669$, $p<0.01$). Hence, Hypothesis 4 is supported.

Table 7: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics		
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	5.910	.445		13.269	.000	5.025	6.795						
	Gender	-.044	.266	-.016	-.165	.869	-.572	.484	.019	-.017	-.015	.931	1.074	
	Team_size	-.035	.017	-.209	-2.127	.036	-.068	-.002	-.268	-.219	-.197	.891	1.122	
	Age	-.437	.232	-.188	-1.881	.063	-.899	.025	-.058	-.194	-.174	.861	1.161	
	Project_Duration	-.039	.013	-.302	-3.107	.003	-.064	-.014	-.350	-.311	-.288	.914	1.095	
	Team_role	.671	.271	.235	2.477	.015	.133	1.210	.226	.253	.230	.959	1.042	
	Team_Learning_Behavior	.669	.106	.515	6.291	.000	.458	.881	.601	.555	.488	.901	1.110	
2	(Constant)	2.553	.651		3.923	.000	1.260	3.847						
	Gender	.089	.223	.032	.399	.691	-.355	.533	.019	.042	.031	.922	1.084	
	Team_size	-.018	.014	-.110	-1.308	.194	-.046	.010	-.268	-.137	-.102	.859	1.164	
	Age	-.262	.196	-.113	-1.333	.186	-.652	.128	-.058	-.140	-.104	.844	1.185	
	Project_Duration	-.027	.011	-.209	-2.530	.013	-.048	-.006	-.350	-.259	-.196	.884	1.131	
	Team_role	.565	.227	.198	2.488	.015	.114	1.017	.226	.255	.193	.954	1.048	
	Team_Learning_Behavior	.669	.106	.515	6.291	.000	.458	.881	.601	.555	.488	.901	1.110	

a. Dependent Variable: Team_Performance

10. Discussion

We developed a model suggesting that individual-level variables may affect team's ability to achieve ambidexterity and that organizational-level supportiveness shapes their effectiveness in doing so. The results of this study highlight that individual learning, processes & support organization context are important to the team learning and as a result influence the performance of a team. Team members through research strongly point out that working in a team gave them a sense of personal success and helping them concentrate on their tasks to achieve the team's goals. To be more specific, it is found that not only individual learning but also trust between members provides an important condition for team to combine different learning activities and to overcome any potential problems.

Thus, researchers should be encouraged to pursue this line of analysis. The results also provide additional empirical support for the notion that team performance can be evaluated using a team-level analysis. Team learning provides to their members the opportunity for more interpersonal communication, systematic problem-solving,

collaborative conflict resolution, group decision making which are significant factors in order to enhance the general team performance and achieve team goals

That is, teams differ in their general ways of team learning, with some teams preferring certain modes of learning over others. This is an important finding, for a team-level analysis of team performance shifts the focus from individual learning to working of the unit as a whole and to what is considered the standard mode of learning in the unit.

The study augments and extends existing knowledge in the domain of team performance in several ways. First, the results of this study are consistent with previous research "Team learning Edmondson ASQ 1999" and underline the advantage of the cooperative learning style over the competitive style in promoting team performance. According to David Johnson and Roger Johnson (1999), there are some basic elements of cooperative learning style that allow successful small-group learning. First of all, the Positive interdependence between Team Members help them to feel responsible for their own and the group's effort. However, it is also important for members to encourage and support one another in order to increase the sense of trust within the team. It is also important to refer that team members gain direct instruction in the interpersonal, social, and collaborative skills needed to work with others occurs.

The results suggest that the way in which team members manage their team learning behavior & some processes can affect their overall team performance. Teams that rely on the cooperative style tend to have better performance. Teams that adopt the model that we analyzed have more possibilities for a successful project in contrast with a team that keep distances with each other and doesn't follow the processes and as a result it far away from attaining the goal.

These expectations lead to a genuine exchange of diverse ideas and perspectives that recombine into effective and mutually advantageous solutions, thus promoting team performance.

Individual-level factors and processes have been viewed in the literature review as alternative explanation of team performance. The level at which group members depend on each other for information, resources, and execution activities affects the importance of processes used by a team.

In cases where group members are highly dependent on each other, interpersonal processes are extremely important for the effectiveness of a team. In addition, the size of the group determines how important the different processes are for the group to be effective. Larger groups face greater challenges in coordinating members than smaller groups, so actions and interpersonal processes are extremely important for the effectiveness of large groups. Therefore, it is important to determine how both the number of people and the tasks required to complete the projects can influence how members of the team work together.

Each set of processes is positively linked to the team's performance and the satisfaction of team members. The more effective a team is at setting targets, coordinate activities and co-operate, the better the team performs and the most satisfied members work as a team member. Especially in situations where group performance is lagging, members or managers of the team may review these sets of processes to help diagnose the probability of occurrence of problems. Determining all the processes that a team may have problems with (creating action plans, coordinating activities, interpersonal conflicts) can help determine the type of intervention that will be most useful for upgrading performance.

This thesis supported that both measures influence team learning & performance. The results showed that informal learning & supportiveness of organization is a mechanism that enhance performance outcomes. There is some evidence in this study that control measures such as size of a team and project duration influence in lower grade the effectiveness of a project. However, they help related to the other measures in order to have better results in team performance.

In this study, my focus on learning behavior made the interpersonal context especially important. However, the need of learning in work teams is likely to become increasingly critical as organizational change and complexity intensify.

11. Managerial implications

Developing effective ways of managing the factors such as team learning and some of the processes has beneficial effect on team performance. As suggested by our results, individual learning, the support from the organization and mainly interpersonal processes seem to be good for making effective use of members teamwork and general to the performance of project and the whole organization. Training can be provided to develop good relationships between members and in addition more knowledge background for the members of a team to achieve their personal and project goals. Team members are trained and cooperate each other to express their ideas, positions and feelings directly and without animus. They cease defending their own views long enough to ask each other for more information and arguments. They work to resolve any problem in their project and to succeed the project goals. The results provide important evidence that team learning serves as a key mechanism in helping teams enhance their skills, acknowledge the task of their project and its processes, cooperate and as a result to enhance the team performance. Finally, the support from the organization that project team works is strongly related with the final performance of the team. When a team feels that his company support them either with bonus or with good comments, then team wants more and more to succeed the company's goals and as a result to deliver a successful project.

12. Appendix 1

TEMPLATE OF SURVEY

Hello,

You are invited to participate in my thesis survey about ""Strategic Management and Dynamic project teams in organization intensive to knowledge & technology". In this survey, several different teams will be asked to complete a questionnaire that asks questions about the effectiveness of team performance. Completion of this survey will take approximately 10-15 minutes. It is very important for me to learn your opinions. Your survey responses will be strictly confidential and data from this research will be coded and will remain confidential. It would be helpful for each team & corresponding team member to choose a project code in order to have better results. (It isn't necessary to be the same name with the real one).

Individual-level variables.

Informal learning

- *My skills had increased as a result of working on that team.*
- *I enjoyed working on that team.*
- *Working in that team provided me with an opportunity for professional growth and development.*
- *“Working on that team gave me a sense of personal accomplishment.*
- *That team made good use of my skills and abilities.*

Team learning behaviour

- *It took time to figure out ways to improve our team's work processes.*
- *That team tended to handle differences of opinion privately or off-line, rather than addressing them directly as a group.*
- *Team members went out and got all the information they possibly could from others such as customers, or other parts of the organization.*
- *That team frequently sought new information that leads us to make important changes.*
- *In that team, someone was responsible of making sure that we stop to reflect on the team's work process.*
- *People in that team usually spoke up to test assumptions about issues under discussion.*
- *We invited people from outside the team to present information or have discussions with us.*

Supportiveness of organization context

- *That team got all the information needed to do our work and plan our schedule.*
- *It was easy for that team to obtain expert assistance when something came up that we didn't know how to handle.*
- *That team was kept in the dark about current developments and future plans that might affect its work.*
- *That team lacked access to useful training on the job.*
- *Excellent work pays off in this company.*

Transition Processes

- *Team members discussed our performance vision.*
- *Team members discussed what we could do day to day to make our performance vision a reality.*
- *Team members discussed our district's objectives.*
- *Team members discussed to what extent our team actively worked to identify the key challenges that we expected to face.*

Action Processes

- *Members of my team took the time we needed to share task-related information*
- *Members of my team actively learned from one another*
- *Members of my team effectively communicated with each other throughout the workday*
- *Members of my team to what extent did our team actively work to assist each other when help is needed*

Interpersonal Processes

- *Members of my team created an environment of openness and trust.*
- *Members of my team really might trust each other.*
- *Members of my team thought in terms what its best for the team.*
- *Members of my team to what extent did our team work to actively encourage each other to perform our very best.*

Team Performance

Compared with the very best team you are working with or have worked with in the past, please rate the performance of your current team on the following dimensions (1=poor to 7=excellent):

1. *Efficiency*
2. *Quality*
3. *Technical innovation (Productivity)*
4. *Adherence to schedule/budget (Mission fulfilment)*
5. *Work excellence*
6. *Satisfaction of working with this team.*

Controls

- *Gender*
- *Size of team*
- *Age*
- *Project duration*
- *Position/ Role (PM/ Team Member)*

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