An Integrated Model Recommendation about Team Performance Measurement and Evaluation

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Abstract

There has been a great increase of interest by the academics and practitioners in the studies on teamwork and evaluation of team performance in the recent years. Yet there are still some gaps in the related literature especially in team performance evaluation models and approaches. Such models focusing only on individuals as a measurement unit have been criticized because they foster individual competition and harm the team spirit. On the other hand, the models over emphasizing the teams as a measurement unit have been accepted as ignoring the individual performance and recognition and not preventing the social-loafing. It was also noticed that in the literature inter-team performance measurement and evaluation processes have been as well ignored. This study aims at a) reviewing the previous studies on team performance evaluation, b) identifying some integration gaps in current team performance models, c) developing a conceptual model and d) formulating some propositions for the researchers who want to make further studies in this topic. This paper is based on critical review of previous empirical and theoretical team performance measurement literature and it is tried to develop a conceptual model to produce new insights of indicators affecting team performance measurement and evaluation. The study tries to extend the previous work on team performance evaluation models by developing an "integrated" model with some new variables. At the end of the study nine hypothetical propositions were developed. The model intends to suggest some new views related with the team performance's place in the system of organizational performance.

Keywords: team, team performance management, intra-team performance, inter-team performance, task performance, contextual performance

1. Introduction

We come across "team" as a prominent phenomenon in almost all types of organizational structures, from sports and art to the worlds of academia and industry (Cohen & Bailey, 1997; Aguinis Gottfredson & Joo, 2013; Barnes et al., 2011). By moving from conventional hierarchical structures towards a more process-oriented organizational form based on cooperation, "Team" has gained greater importance (Mendibil & MacBryde, 2006, p. 118; Lanaj et al., 2012. p. 735). Some are of the opinion that an organization consists of a number of teams, rather than a number of individuals (Stewart, 2006, p. 29). Katzenbach and Smith (1993) define a team as 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". Brannick and Prince (1996, p. 4) define team as a unit made of two or more people who carry out different tasks in order to achieve common goals, and work compatibly with each other. Although much attention was drawn to the issues of "team" by the Hawthorne experiments in industry, their importance increased following the studies undertaken on safer flights in military areas (Brannick & Prince, 1996, p. 3).

Together with the benefits of "team" come new debates and practices in various aspects of HRM, in all organizational functions. For team-based forms, the selection of human resources, performance appraisal and management, learning and development practices and compensation practices are designed differently from individual-based forms to those used to calculate (Barnes et al., 2011, p. 1612). In recent years, increasing attention has been given to teamwork measurement and evaluation, primarily by academics and practitioners. In relation to this, various performance measurement models have been developed and put into practice (Mendibil & MacBryde, 2006, p. 118). Organizations that utilize more teamwork, and other group actions, have initiated

new debates, claiming that the result from team performance is more important than that of each individual's performance. However, there are some who claim that team performance and processes are insufficient, without considering each individual performance, because a team consists of individuals. So, how do the factors of individual differences help to estimate individual performance in teamwork? Which aspects of individual performance relate to team performance? How can individual performance be turned into a team performance? Such questions have to be asked (Sonnentag & Frese, 2003, p. 17). Sonnentag and Frese (2003) give various answers. According to these authors, having only the knowledge and skill-set related to the task is not sufficient to achieve it. Inter-personal and self-management skills are also essential requirements. Secondly, individual task performance is obviously important to the overall team performance, but individual task performance alone is insufficient as team performance mostly consists of interrelated tasks. At this point, contextual performance comes into play. Thirdly, turning individual performances into a team performance is very complex (Sonnentag & Frese, 2003, p. 17).

Performance evaluation has a huge impact on a worker's motivation and development. A system of appreciation and reward is the proper way for a worker's needs to be acknowledged. Additionally, it provides a link between individual activities and organizational effectiveness (Scott & Einstein, 2001, p. 108). Team performance measurement and evaluation can provide both motivation, and the focus required to have a positive effect on *team* processes. It also provides the feedback necessary to aid measurement, decision making, problem diagnostics and interference. It also enables the team to constantly refine and improve its performance through learning (Hunt, 1999, p. 14). Therefore, assessing individual performances and combining these with the results from the organizations performance is required by those structures which are based on team. When implementing any performance management system, we are faced with the question of whether to focus on the individual or on the organization when measuring and evaluating performance (Aguinis et al., 2013, pp. 504-505).

Within many of today's organizations which are based on the team structure, evaluating performances on an individual basis alone, is not sufficient when determining that individual's contribution to the organization. To measure and evaluate how the team as a unit contributes to the organization is also a very important issue (Barnes et al., 2011). In organizations benefitting primarily from teams, it is well-recognized that even high-performing individuals cannot do enough on their own to ensure ultimate overall success. Moreover, it can prove difficult to assess the contributions made by each individual (Brannick & Prince, 1996, p. 9).

When we look at the subject from the system approach, we can see that such a performance management system can succeed only when the goals of both sub-systems and system are compatible. Systems evaluating only the individual can be criticized for inciting internal rivalry, as individuals may then seek to maximize their own personal gain, while ignoring team performance goals. On the other hand, systems which evaluate only the team can be criticized for causing social-loafing, and for potentially ignoring those individuals who perform at well above average. It is also possible that team performance goals can be missed, due to rivalry and/or the lack of coordination between teams. (Aguinis, 2013; Barnes et al., 2011; Scott & Einstein, 2001). It is therefore essential that any such performance management system must be compatible with the goals of the organization. Such systems should also evaluate the individual, the team, and inter-team performances. As Aguinis and his colleagues (2013: 505) state: "I" and "we" should be included in the system at the same time. In further pages, we evaluate studies regarding teamwork, and then argue the propositions within the scope of the recommended model.

2. Previous Studies Pertaining to Team Performance

There are relatively few models evaluating team performance in related literature (Çiçek, Köksal & Özdemirel, 2005, p. 333). There is no explicit consensus on team performance measurement and evaluation. Putting forward a possible reason for this, Haley, Undrey and Vincent (2004) argue that the empirical data used for valid measurement is insufficient, and also that different types of evaluation are necessary for different teams. It can also be said that empirical data can be limited when studies deal mainly with the dimensional structure of teamwork (LePine et al., 2008, p. 274).

Most research on team performance has been done within the scope of 'input-process-output' (Mathieu et al., 2008, Stewart, 2006 in Gladstein, 1984; Goodman, Ravlin & Argote, 1986; Hackman, 1987; McGrath, 1984). In the input-process-output model developed by McGrath (1964), he outlines a number of points on the effectiveness of team, and develops a model for the measurement of team performance. "Input" factors to be considered may include the individual features of each team member (such as competencies, personality), factors at team-level (such as task type, the effect of external leadership) plus organizational and contextual factors

(such as organizational design features, environmental complexity). The "process" identifies the interactions between team members, including how input becomes output. Finally, "output" is the end-product of team activities. These include the qualitative and quantitative performance and emotional reactions of members, such as commitment and satisfaction (in Mathieu et al., 2008, p. 412). Kiesler (1969, p. 5) defines three measurement units; team product, team form and team process (in general) (in Çiçek et al. 2005, p. 334). The input-process-output model of McGrath (1964) is further developed through studies undertaken by researchers (in Mathieu et al., 2008, p. 412), and with added contextual factors (Cohen & Bailey, 1997). The latter added environmental factors to the model, which affects team formation and inputs. The Input-Process-Output model is criticized for failing to distinguish multi-process types. Ilgen and his colleagues (2005) suggested an "input-mediator-output-input" model (1993). As a mediator, we can also take into account cognitive, motivational and emotional situations. Janz and Harel (1993), however, suggest a model from the aspect of behavioral patterns of the team. This model puts forward possible methods for analyzing behavioral patterns in order to elicit better team performance. In his study, Zigon (1994) states that measurement is necessary for both individual and team performance, and defines three basic measurement points which are as follows - ultimate results, key process steps and key intermediate results (Çiçek et al., 2005, p. 334; in Janz & Harel, 1993; Zigon, 1994). On the other hand, Çiçek and his colleagues (2005: 334) recommend a model which has four basic components, namely form of team, process, input and output. In addition, Aguinis and his colleagues (2013, p. 507) mention three different levels of performance measurement in team-based structures. These are the individual task performance, the individual contextual performance and the measurement of team performance as a whole. Individual task performance deals with the measurement and evaluation of specific activities within an individual's work, from the aspect of quality and quantity. Individual contextual performance deals with the relationships between team members as they work together on the task.

Mathieu and his colleagues (2008) divided team performance into three sub-categories as a result of their review of existing literature. These are performance at organizational-level, team performance behaviors and results, and role-based performance. Studies on performance at organizational level relate to top-management teams. In these studies, a direct connection between team features and organizational results has been established. In others, it is the relationship between team performance behaviors and results which is under scrutiny. For example, while behaviors which can bring success, such as improvements to team processes, learning behaviors, and cognitive task performance are studied as "performance behaviors", the outcomes contain straightforward "performance evaluation results". On the other hand, studies of role-based performances investigate whether team members undertake necessary roles while they are working (Mathieu et al., 2008. pp. 415-417).

When we examine those models relating to team performance, we can see that some focus solely on the individual, some only on the team, while others look at both. (Salas et al., 2009). We have found that there is no study available, which focuses on individual, team and inter-team performance at the same time, and combined with organizational performance, apart from those studies which examine multi-team systems in another context. Although Lanaj et al. (2012, p. 735) claim that inter-team dynamics in team-based structures play a significant role, it is apparent that studies focus more on intra-team processes, while ignoring the processes of inter-team. At this point, each unit is thought to be input and output for one another in this study, and the approach presented is one which evaluates individual, team and organizational performance on three levels, while considering inter-team performance measurement, but without regard to that team performance which is only composed of intra-team processes. Team-based organizations have to formulate models to assess how team results will affect organizational performance in situations where there is a high degree of interdependency between teams (Mathieu et al., 2008, p. 416). Apart from this, factors relating to the process, such as the degree of maturity, magnitude, hierarchical stages and levels of team interdependency may all be included in the model.

3. The Integrated Team Performance Model

When measuring team performance, matching individual goals with team goals, and team goals with organizational goals, respectively, is an important issue in the potential success of the performance management system (Aguinis et al., 2013, p. 507). Among the different models analyzing team performance, there is consensus that team should be considered on three separate levels - individual, team and organization. These models focus on input (such as type of task, equipment, training), process (team processes) and result or product (Brannick & Prince, 1996, p. 4). Hunt (1999, p. 14) claims that team performance measurement needs to be viewed within the system approach. According to this, the team itself is a system. Strategies of team performance measurement should take into account those system components such as members, sub-teams, tasks, processes and interfaces, as well as system outputs. A team carries out its activities within an organizational upper-system in which environmental and contextual factors may affect its performance. Team performance measurement,

which has factors relating to each other - interfaces, effects, functions relating to context - is a system on its own.

In another study, Mathieu and his colleagues (2007) try to explain different levels of organizational performance using meso-perspective. Meso-perspective puts forward the idea that individuals are settled in teams or work groups, teams are settled in organizational sub-units, and sub-units are settled in organizations (Mathieu et al., 2007: 891-892). Scott and Einstein (2001: 115) claim that approaches presenting only a single formula to measure team performance are incorrect. In addition, they express the opinion that each team should have its own measurement and evaluation approach relevant only to itself.

Within this study, the integrated team performance model, based on the system approach, has three basic factors (as illustrated in Figure 1). Performance measurement at an individual-level, team-level and organizational-level is presented in an integrated manner. While skipping from individual-level to organizational-level, contextual and task performance should be measured separately for each unit. Additionally, some factors are included in the model as moderators during transition between units.
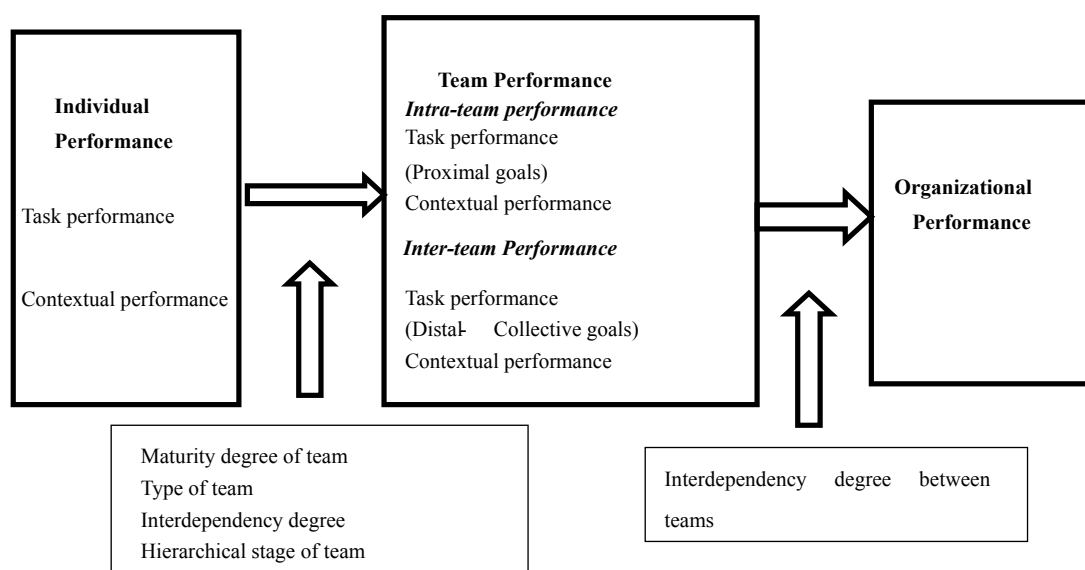

Figure 1. Integrated team performance model

In the following section, elements within this model will be explained, and propositions relating to the model will be presented.

3.1 Performance Measurement and Evaluation Process Elements in Team-based Forms

3.1.1 Individual Performance Factors

Armstrong (2009) states that team members can affect team performance in three different ways. These are: the actual job they are doing and the skills, competences and behavior they apply to the work, secondly; the job they perform as team members and thirdly; the team performance as a whole (Armstrong, 2009, p. 240). Measuring and evaluating an individual's efforts and contributions is essential, providing feedback on his/her performance, and helping to define where an individual's talents can be developed and improved upon. Individual performance evaluation also prevents social-loafing within a team-based structure. Social-loafing can occur when individual efforts are not evaluated or recognized (Scott & Einstein, 2001, p. 109). At this point, measuring individual performances within the team also has an important role in the system. Individual performance evaluation in team-based structures has two main elements.

a) Individual Task Performance

According to Sonnentag & Frese (2003), task performance is to an individual's proficiency with which he or she performs activities which contribute to the organization's "technical core" (Sonnentag & Frese, 2003: 6). It

varies from work to work and is related to talent and behavior within the role. Individual task performance evaluation is important to team performance and effectiveness. At its conclusion, team members receive feedback on their level of contribution to the task, providing each with the information needed to improve their performance. According to Scott & Einstein (2001) types of teams based on two important dimensions: membership configurations and task complexity (See Figure 2). Each individual is responsible for observing and documenting her/his performance within work/service teams. This is routine from the point of task complexity, and static from the point of membership configuration (Scott & Einstein, 2001, p. 112).
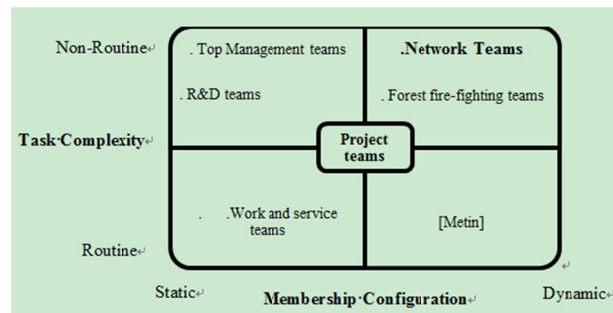

Figure 2. Types of teams

Source: Scott, S. G., & Einstein, W. O. (2001). Strategic performance appraisal in team-based organizations: One size does not fit all. The Academy of Management Executive, 15(2), 107-116.

b) Individual Contextual Performance

Contextual performance includes activities in which organizational, as opposed to technical, goals are sought and attained. These activities contribute by supporting the organizational, social and psychological environment. Contextual performance not only comprises being a reliable member of the organization and assisting co-workers, but also making suggestions to improve work procedures. It is about more voluntary and extra-role behaviors. While task performance varies from work to work, contextual performance is similar for almost everyone. Task Performance relates to talent, while Contextual Performance relates to personality and motivation (Sonnentag & Frese, 2003: 7). Both task and contextual performance measurement at an individual-level is a must for sustainable team success. It is not necessarily true that a successful individual is also a successful team member. "Team" is more than the sum of all the individuals involved.

Proposition 1: Team performance consists of task and contextual performance of individuals.

3.1.2 Team Performance Factors

Team performance measurement and evaluation encourages co-ordination, raises teamwork behaviors, and the sharing of information between team members (Aguinis et al., 2013: 505). According to Brannick and Prince (1996), co-ordination is the key feature of team. During a task, team members act simultaneously, successively, or both. This is a distinctive feature of task and contextual performance within Team. To sum up, team performance should contain not only intra-team performance measurement as a unit, but also inter-team/off-team performance measurement.

3.1.2.1 Intra-team Performance Factors

a) Intra-team Task Performance

Task performance goals for both the individual and the team need to be established (Uyargil, 2013, p. 127). Criteria of intra-team performance measurement are determined by the goals of the team, and special performance standards (Armstrong, 2009, p. 241). When measuring intra-team task performance, factors such as sales volumes, customer complaint levels, customer satisfaction, quality of work, productivity rate and win-loss rate etc. are taken into consideration. The team is responsible for observing its own performance and ensuring goals are achieved, as well as possible consequences (Scott & Einstein, 2001, p. 112).

b) Intra-team Contextual Performance

According to team performance goals, determining possible reasons for instability of performance provides improved level of control. Complete control of results is not always possible, due to intra-team and outside

factors. This case is easier in routine or static teams. The more complicated a task gets, the more the effort - performance relationship becomes uncertain, thus making behavioral measurements more important (Scott & Einstein, 2001, p. 112). At this point, task performance measurement alone is not enough; the, measurement and evaluation of intra-team contextual performance is also vital.

3.1.2.2 Inter-team Performance Factors

A team has to have the ability to adapt to the sustainable environment in order to manage performance effectively. A team's performance is dependent on both its own inter-processes, and on its interaction with the environment (Smith, 2014). This environmental factor also includes intra-organization receivers being effective in achieving the goals of the team, or on other factors dependent on one another for the result (Salas et al., 2009, p. 201). Researches carried out on teams/groups emphasize heavily towards the internal processes, and questions how important exterior communication processes are to the team's effectiveness as well. Moreover, studies related to inter-boundaries technical information exchange for raising innovation performance are done. While some studies focus on inter-dependency and co-ordination between teams, studies on resource and power distribution may focus on exterior factors such as political or other persuasive influences (Ancona & Caldwell, 1992, pp. 635-636). Performance measurement and evaluation of the organizational structure, based on teams only at a "team" level as a unit, may deliver incorrect results depending on the system approach.

As the team is typically greater than the sum of the individuals involved, the sum of all teams may not add up to the organizational performance as a whole. In organizational structures comprised of similar/different teams, two or more teams may work together in different fields in order to undertake and complete complex tasks. Within a team, studies of team members are evaluated in accordance with team goals. Between teams, on the other hand, adaptation and the efforts of several teams are evaluated in accordance with collective goals and/or results. Here, inter-team tasks and contextual performance results step in. Within performance measurement systems, one team should not be encouraged to maximize its own performance to the detriment of other team(s) within the company, or to the organization as a whole. (Scott & Einstein, 2001, p. 114).

a) Inter-team Task Performance

When evaluating inter-team performance, multi-teams consisting of individuals connected to more than one team (such as inter-function teams, R&D teams etc) (Salas et al., 2009, p. 223) and teams made up of individuals unconnected to each other within the same organization in the context of specific tasks (such as product-service teams), have to be taken into consideration. When evaluating unconnected teams within the context of task, contextual performance should be taken into account. On the other hand, where teams consist of individuals working together on more than one team, both contextual and task performance have greater significance.

When team is thought of as a unit, team goals can be considered as proximal goals, and those of inter-team are seen as distal-collective goals. These goals, compatible with the organization's strategic planning, are then made central to the activities of each unit. In parallel with this, each unit is assigned task/s according to its own level of competence. Each team may have different abilities in terms of functional, educational or organizational issues. Between teams, there may be dependencies from the point of view of input, process and output. Specific task definitions will change according to these differences (Lanaj et al., 2012, pp. 736-737; Mathieu et al., 2007, p. 896). Moreover, it is needed to be known which result performance is brought by this specific task performance goal "in the whole picture". Therefore, unit-level team task performance should be evaluated separately.

b) Inter-team Contextual Performance

In organizations consisting of more than one team, the formal design of a task-authority relationship, co-ordination, and co-ordination of resource usages are the issues which need to be addressed. The fact that each team is trying to maximize its own gain may cause problems for overall organizational goals. Teams should communicate with each other, and be aware of acting in a systematic way. Some inter-team contextual performance criteria is therefore necessary (Aguinis et al., 2013, p. 507). Inter-team communication and co-ordination, sharing best practices, problem solving and conflict resolution skills can be measured in this phase (Smith, 2014).

Based on the above, we can construct our next proposition as follows.

Proposition 2: Organizational performance consists of contextual and task performance of inter/intra-team.

3.2 Performance Criteria

Applying a single performance evaluation system, even one which has been specifically developed for an organization, typically ignores those differences which exist between the various teams within that organization.

These differences are ignored performance management systems may fail in organizations with a multi-team set-up (Scott & Einstein, 2001, p. 107). Salas, Cooke & Rosen (2008) list certain factors which can affect team performance. Examples of these include elements which result from the composition of the team (such as personality, cognitive skills, motivation, and cultural factors), some forms of work (such as team norms, forms of communication) and certain features of the task (such as workload, type of work, dependency). Defining criteria such as the maturity levels of the team and of each member, the type, degree of interdependency and hierarchical status of the team itself, all assist in the effective implementation of a performance management system.

3.2.1 Degree of Maturity of a Team

The degree of maturity of a team indicates the developmental state of that team. The higher that degree is, the greater the increase in a team's developmental levels. Mendibil and MacBryde (2005), as a result of their studies, observed that this degree of maturity is a critical factor in any performance measurement system. It should also be taken into consideration when defining performance criteria. The contribution level of higher performing individuals to overall performance in a developing team, differs from their input to a developed team. Team performance measurement standards must, therefore, be constantly reviewed and updated within the process. Depending on the maturity levels of team members, performance indicators can be added or omitted (Aguinis et al., 2013, p. 507). The degree of maturity can be measured by behavioral indicators such as having explicit goals, communication and conflict resolution management skills, good decision making, problem solving processes, dependency and participation, information skills, culture, motivation, management (Çiçek et al., p. 336).

This allows us to put forward the following proposition.

Proposition 3: Criteria used to define team performance can be modified depending on the team's level of maturity.

3.2.2 Type of Team

Performance management of different types of teams plays a critical role in organizational effectiveness and getting competitive advantage (Salas et al., 2009, p. 198). Measurement criteria change depending on the type of team. Cohen & Bailey (1997, p. 241) analyze "team" in four categories: work teams, parallel teams, project teams and management teams. Scott and Einstein (2001, p. 110) try to explain team types using a dual matrix, consisting of membership configuration (static and dynamic) and task complexity. When membership configuration is analyzed within a static-dynamic continuum, in static configuration, we can observe that members fulfill tasks full-time and teams do it on a life-long basis. On the other edge, a completely dynamic form attracts our attention. In accordance with the requirement of the tasks, we can mention short-time seniority of the members. Members join or leave from a team for as long as a task necessitates. At the same time, they can work on off-team tasks. A second dimension can be formed depending on the complexity of the task. Routine, measurable and stable tasks are evaluated in one corner; non-routine and situational tasks in another. Scott and Einstein (2001) give some examples of this type of team, such as work-service teams being classed as routine-static, top-management teams or R & D teams classed as non-routine-static, and network teams as non-routine/dynamic. Project teams are located in the middle of the matrix as semi-static/dynamic and semi-routine/complex.

Determining criteria according to process and product will be different for each team. Measurements relating to process focus on the behaviors demonstrated by individuals and team while working together. Measurements relating to process provide information on how results are achieved. This information also clarifies how performance can be enhanced. Although measurement criteria relating to process are used in the evaluation of task and contextual performance, they mainly deal with the latter. Measurements relating to results in network/virtual teams are hard to record due to non-stable membership and a non-routine task form. Therefore, measurements relating to process are regarded as being of greater significance (Aguinis et al., 2013, p. 507).

Measurements relating to results have countable features such as sales volumes or numbers of customer complaints. According to the classification by Scott and Einstein (2001), criteria relating to result are utilized more in the measurement of routine tasks, and in teams with a stable membership. An example of this would be a work-service team. Tasks carried out by this type of team are usually routine, standard, short-term, able to be evaluated objectively, and with a tight connection between effort and performance (Aguinis et al., 2013, p. 507).

On the other hand, in project teams, due to both its short-term form and members from different functional fields sharing tasks measurements related to process that evaluates various stages of the project and results criteria including completion of the project are used together (Aguinis et al., 2013, p. 507).

Proposition 4: Criteria used in determining team performance can change according to the type of team.

3.2.3 Inter-dependency Degree of Team Members

Interdependency in a team-based study can show up in one of two ways - task and result (Salas et al., 2009: 199). Interdependency from the viewpoint of task emerges through the level of participant's cooperation and interaction with each other while working. The degree of interdependency will be high when the level of information, material and input-exchange is high (Stewart & Barrick, 2000, p. 137). On the other hand, interdependency from the viewpoint of result can be seen in the amount of shared results (rewards) and collective performance. Regardless of individual performance management processes, performance management processes at team-level must be designed to measure both individual accountability and the output based on a united effort (Salas et al., 2009, p. 199).

Individual contributions of members to team goals become more difficult to measure at those times when interdependency between team members is tight. Therefore, while result-oriented performance evaluation criteria are suitable for the team (Scott & Einstein, 2001, p. 111), process-oriented measurements are better suited to most individuals (Aguinis, Gottfredson, & Joo, 2013, pp. 507-508).

Proposition 5: Criteria used to measure team performance can change depending on the level of interdependency between team members.

3.2.4 Hierarchical Position of Team

A team can be ranked at all hierarchical levels of an organization in different ways (DeChurch & Mesmer-Magnus, 2010, p. 32). The structure of a team can change depending on its hierarchical level. Moving towards the upper levels, cooperation and communication, followed by creativity and flexibility, rise in significance. This means that performance measurement and evaluation criteria will vary as well. According to the team types classification of Scott and Einstein (2001), top-management teams are foremost in being non-routine, from the point of view of task complexity, and static from the view-point of membership configuration. Teams for whom task complexity is decreasing, and where many elements are becoming routine, may be regarded as work-service teams. Towards the upper levels of the hierarchy, task definitions and the composition of the team may also change due to the increasing level of managerial and humane skills required, in addition to technical abilities. Towards these upper levels, features of tasks tend to become more strategic, rather than operational and/or technical. The location of task activities may also change (Cohen & Bailey, 1997, pp. 242-243). Thus, the criteria used for team performance measurement and evaluation need to be flexible. Using the same criteria at every level can mean that those teams which have different task designs and membership composition, may not be correctly evaluated.

Proposition 6: The criteria used to define team performance can vary depending on the position of the team within the organization.

3.2.5 Interdependency Degree of Inter-teams

The greater the amount of information, material and output exchanged between teams, the higher the level of interdependency-both between teams and within the team itself. Therefore, evaluating a team's performance on a stand-alone basis, may not provide reliable results. The criteria used to measure performance, according to the level of inter-team dependency, need to be established (Scott & Einstein, 2001, p. 114). In organizations comprised of teams with a high-level of interdependency, measuring how each team contributes to organizational performance can become quite complex (Mathieu et al., 1998, p. 416). Typically excluded here, however, are the sales teams which can be directly linked to the results / output of a business.

Proposition 7: Criteria used to define team performance can be modified, depending on the interdependency degree of inter-teams.

3.3 Application of a Model of a Performance Management System

Implementing any model is not simply a question of observing performance and making evaluations. Additional factors such as motivation, contextual and environmental effects, feedback, measurement design, and the experience of team members should be taken into consideration (Salas et al., 2009, p. 200). Therefore, incorporating valid learning and developmental applications, and a method of reward appropriate to the model, is essential to the potential success of the system. In the next section, we outline some factors which need to be considered in depth when designing a valid and useable reward and developmental system.

3.3.1 Rewards Practices

While collective rewards can motivate a team to work together as a single unit, individual rewards may encourage people to take responsibility for their own actions (Cohen & Bailey, 1997, p. 254). When a

team-based performance management system has been implemented, reward practices centered on the team increase the effectiveness of that system. The down side, however, is that using only team-based rewards can cause social-loafing to occur. In addition, it can mean that high-performing individuals are not acknowledged. Therefore, an individual-based reward system needs to be practiced in tandem with the team-based one. How the balance between these two practices can be achieved varies from team to team. When tasks become more routine, and less dependent on one another, individual contributions gain in importance. In this case, individual-based reward practices are more significant. On the other hand, where the interdependency level of inter-tasks is high, and greater co-ordination and communication is required, team-based reward practices increase the effectiveness of the system (Aguinis et al., 2013, p. 510).

Proposition 8: Form of team (such as its function, type, etc) defines the appropriate method(s) of reward practices.

3.3.2 Learning and Development Practices

Ideally, team managers should give feedback to team members at periodic performance evaluation meetings. This feedback should include information on both the individual and on the team's performance. It would be more useful for this development-aimed feedback than sharp evaluation. Especially if evaluation is closely related with reward, there will be harm to its development purpose. The emphasis put on the value of this advice to a team's learning and developmental practices, and the quality of changes implemented, may vary based on the level and structure of the team. Based on this conclusion, we can see that feedback given by a team manager on learning and developmental practices has purpose and value, as does the feedback provided by colleagues and/or other team members. Although these latter assessments may not be accepted as reliable in terms of reward practices, they can provide valuable data for developmental purposes. Moreover, feedback given by peers can be used as a means of preventing social-loafing (Aguinis et al., 2013, pp. 509-510). Setting valid objectives, constantly checking if these have been achieved and applying appropriate changes where necessary are all helpful in generating a team's best performance.

Proposition 9: The structure of the team determines the quality of learning and developmental practices.

4. Conclusion

Research carried out in 1997 shows us that, at that time, a mere seven percent of Fortune 100 companies used the self-managing team process. However, over the following ten years, the number of firms implementing this structure grew considerably, rising to 65% by 2007 (Cummings & Worley, 2014, p. 388). As the use of self-managing teams within organizations increased, methods of measuring and evaluating team performance have also started to be emphasized. Focusing solely on individual or on team performance, in the tasks relating to team performance measurement, can create significant problems. Further problems may arise when inter-team performance measurement is ignored. What has been put forward in this study, is an integrated model of performance measurement and evaluation which takes account of the various parts - from individual to team performance, team to inter-team performance, and inter-team to organizational performance.

The development of a conceptual model out of this study may prove of assistance to researchers and practitioners in a number of ways. These include-the place of the team performance management system within the organizational performance measurement system; understanding the connection between team performance and individual performance, and being aware of the process related moderator variables. Practitioners should adopt a multi-level perspectives when considering mechanisms for measuring team performance. When measuring the performance of team-based structures, it will be more productive to carry out measurements and evaluations in a hierarchical and multi-dimensional manner, thereby enabling performance to be managed efficiently. An additional conceptual model, to be developed in subsequent studies, need to be tested empirically. Apart from these, contextual influences have an important role on team performance and studying situational-moderating variables connecting the processes of team performance management system may provide valuable information. In addition, there other possible moderating variables may effect inter-team and intra-team processes. Subsequent studies may focus on these.

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