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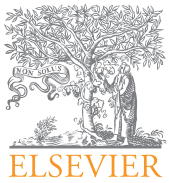

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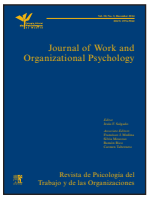

Effective workgroups: The role of diversity and culture

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ABSTRACT

The purpose of this study was to contribute to the clarification of the conditions under which teams can be successful. To attain this goal, the direct and interactive effects of diversity and of the team's cultural orientation towards learning on team outcomes (team performance, team members' satisfaction) were analyzed. Data were obtained from a survey among 73 teams from different industrial and service companies, which perform complex and non-routine tasks. In order to test the hypotheses, multilevel analysis and hierarchical regression analysis were conducted. The results show a significant (although marginal) effect of diversity on members' satisfaction with the team. The team orientation towards learning presented positive effects on both team performance and members' satisfaction with the team. No interactive effects were identified. Although the positive impact of a learning culture on organizational effectiveness has already been studied and is well established in the literature, this is one of the first studies that provides empirical evidence of the impact of this kind of culture at the team level. At an intervention level, this study points to managers who want to create successful teams that they may be advised to enhance the levels of the team orientation towards learning, creating conditions in the team to promote and support the acquisition of knowledge.

Grupos de trabajo eficaces: el papel de la diversidad y de la cultura

Palabras clave:
Equipos de trabajo
Diversidad
Cultura de aprendizaje en el equipo
Satisfacción de los miembros del equipo
Desempeño de equipo
Multinivel

RESUMEN

El objetivo de este estudio ha sido contribuir a aclarar las condiciones que hacen que los equipos sean eficaces. A tal fin se analizaron los efectos interactivos directos e indirectos de la diversidad y de la orientación cultural del equipo sobre el desempeño del mismo (rendimiento, satisfacción de sus miembros). Se obtuvieron datos de una encuesta aplicada a 73 equipos de diferentes empresas industriales y de servicios que llevan a cabo tareas complejas y no rutinarias. Para la puesta a prueba de las hipótesis se llevó a cabo un análisis multinivel y regresión jerárquica. Los resultados señalan un efecto significativo (aunque marginal) de la diversidad en la satisfacción de los miembros en el equipo. La orientación de éste hacia el aprendizaje tenía efectos positivos tanto para el desempeño del equipo como para la satisfacción de los miembros con el equipo. No se observaron efectos interactivos. A pesar de que ya se haya estudiado la repercusión positiva de una cultura de aprendizaje en la eficacia de la organización y que esté bien consolidada en las publicaciones, este estudio es uno de los primeros en aportar pruebas empíricas de las consecuencias de este tipo de cultura al nivel de equipo. Al nivel de intervención, el estudio señala que puede aconsejarse a los directivos que deseen crear equipos eficaces que mejoren el nivel de orientación del equipo hacia el aprendizaje, sentando las condiciones en el equipo que favorezcan y respalden la adquisición de conocimientos.

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Today, more than at any other time in history, organizations rely on groups as a way of structuring their activities. The belief that the establishment of groups is associated with improvements in quality, performance, and effectiveness has led to the proliferation of this system under different forms, types, and designations (e.g., production teams, project teams, autonomous groups, quality circles, multi-functional teams, management teams) (Guzzo, & Shea, 1992).

Despite all the difficulties that working in groups involves, this way of working seems to be superior in many situations, namely when the tasks and the problems are complex. In fact teamwork, in addition to being potentially more creative, tends to result in a greater ability to manage new information and new challenges (Jehn & Bezrukova, 2004; Lau & Murnighan, 1998). Moreover, the transfer of more responsibilities to working groups enables more efficient management of the different skills and knowledge, which enhances group performance and, consequently, organizational effectiveness (Saji, 2004; Tjosvold, 1991).

The central aim of the present research is to contribute to the clarification of the conditions under which teams can be successful. In particular, the effects of diversity and team's cultural orientation towards learning on team effectiveness are analized.

Research developed on the way group composition affects group performance, cohesion, group members' commitment, satisfaction, and other indicators of effectiveness is abundant but not conclusive. In fact, whereas some studies pointed to the existence of a significant effect of diversity on team results (Bantel & Jackson, 1989; Webber & Donahue, 2001) others found no significant, or even negative, relationships (Bowers, Pharmer, & Salas, 2000). Some scholars have argued the need to consider specific contextual variables when modelling the relationship between diversity and performance (Bowers et al., 2000; Williams & O'Reilly, 1998). Thus, to enhance the knowledge about the effects of diversity we must consider how (via what mediators) and when (in the presence of what moderators) diversity might lead to higher or lower performance. The basic idea underlying this current research is that diversity may be associated with differences in information and knowledge, thus leading, under some conditions, to an improvement in team processes and, consequently, in team performance. Mediators like communication (Earley & Mosakowski, 2000), team reflexivity (Schippers, Den Hartog, Koopman, & Wienk, 2003), and team learning behavior (Gibson & Vermeulen, 2003; Van der Vegt, & Bunderson, 2005) and moderators like team culture (Jehn & Bezrukova, 2004) and team tenure (Chatman & Flynn, 2001; Harrison, Price, & Bell, 1998; Sacco & Schmidt, 2005) have been studied and results tend to support this perspective.

Nevertheless, the understanding of the processes that influence the relationship between diversity and group performance is far from complete. In order to better understand how diversity might translate into team effectiveness, in the present study the moderator role of a contextual variable that is significantly related to the way the group deals with knowledge and learning is considered: the team's cultural orientation towards learning.

A learning culture can be defined as an orientation towards the promotion, facilitation, sharing, and dissemination of individual learning in terms of group internal integration and external adaptation processes (Rebelo & Gomes, 2011a). Openness, experimentation, and error acceptance are some of the characteristics that are present in a team with this type of culture. The positive effect of a learning culture at the organizational level is already well established in the literature (Egan, Yang, & Bartlett, 2004; López, Peón, & Ordás, 2004; Yang, 2003). However, despite some evidence that a team's orientation towards learning can have positive consequences on the effectiveness of workgroups (e.g., Bunderson & Sutcliffe, 2003), there is a lack of studies concerning the team level. In this way, we intend to analize the direct relationships between the team's orientation towards learning and team effectiveness.

Moreover, as has been stated above, we intend to analize the moderator role played by the team's orientation towards learning on the relationship between diversity and team effectiveness. Hence, we argue that teams with a culture oriented towards learning are more able than teams less oriented towards learning to process different kinds of information, ideas, and knowledge that emerge as a result of the presence of different kinds of people. Thus, it is expected that in a context of higher levels of team learning culture, diversity will promote effectiveness.

Concerning team effectiveness, team performance and members' satisfaction with the team will be considered. There are two reasons for this option. First of all, these variables are consensually recognized as criteria of team effectiveness. In fact, researchers in the group effectiveness domain use measures of team performance and/or satisfaction in their studies and these variables are included in almost all the team functioning models (e.g., Gladstein, 1984; Hackman, 1990; Hackman & Oldham, 1980). The second reason relates to the fact that we intend to include output variables in two levels of analysis: team and individual. Indeed, both the team as a whole and the individuals could be affected by team conditions and team processes. Therefore, to broaden the field of analysis, it is important to include both individual and team measures of group outcomes.

In this article, we begin with an examination of the relationships between diversity and team effectiveness. We then explore the concept of the team's cultural orientation towards learning. Finally, the results of our study are presented and discussed.

Diversity

As organizations become more and more team-based, dealing with diversity constitutes a major challenge for management. As noted by Christian, Porter, and Moffitt (2006, p. 459) "one of the most challenging issues facing organizations today is that of dealing with workgroup diversity". Additionally to the increased use of groups as a work unit, organizations have become more diverse in terms of demographic differences between people (e.g., in terms of gender and age) (Mohammed & Angell, 2004). Despite the strong interest that diversity has received in recent years, findings are far from conclusive in terms of the positive or negative effects of team composition on team processes and outcomes. In fact, there is still much to know about which individual differences relate to group dynamics and under what conditions (Van der Vegt & Bunderson, 2005).

Diversity has been generally conceptualized as referring to differences between individuals in any attribute that may lead to the perception that another person is different from self (Jackson, 1992). Van Knippenberg and Schippers (2007) noted that group members are not always conscious of the existing differences and they define diversity as a "characteristic of social grouping that reflects the degree to which objective or subjective differences exist between group members" (p. 516). To speak about diversity is, above all, to consider the differences between group members.

Two fundamental theoretical frameworks have guided diversity research: the social categorization theory and the information/decision-making perspective (Williams & O'Reilly, 1998).

According to the social categorization theory, individuals possess a natural tendency to use social categories to simplify reality (Turner, 1982). In this process of simplification, the differences between team members form the basis for categorizing self and others as ingroup and outgroup (Christian et al., 2006). Due to its essence, the social categorization theory envisions the development of biases and stereotypes that may be pernicious when diversity prevails. Consequently, and in accordance with this approach, homogeneous workgroups will be more effective than heterogeneous workgroups (Kulik, 2004).

In the opposite position we find the information/decision-making perspective. This framework proposes that diverse groups of individuals should be expected to have a broader range of knowledge, expertise, opinions, and perspectives than homogeneous groups of individuals. As a result, the more diverse a group is, the greater the resources available to deal with arising challenges and barriers and, consequently, the greater team effectiveness will be (Bantel & Jackson, 1989).

These theories lead to different hypotheses regarding the effects of diversity on group processes and performance: although the first one points to the negative effects of diversity on team processes and results, the latter emphasizes the positive effects of diversity on the group dynamic. In reality, results show that both analyses are not totally supported. Hence, while some studies show positive effects, others show a negative or a null relationship between diversity and performance (e.g., Bantel & Jackson, 1989; Simons, Pelled, & Smith, 1999; Williams & O'Reilly, 1998).

The motivating premise underlying the use of groups as a key approach to organizing work is that when different perspectives, knowledge, and functional backgrounds are brought together, performance can be maximized because it is expected that "two heads think better than one" (Van der Vegt & Bunderson, 2005). Consequently, one can ask: if all members are equal, if they think and act the same way, where is the advantage of working in teams?

However, by itself, probably, diversity isn't good or bad for team performance. The inconsistency between the results may be due to the fact that diversity seems to interact with a variety of other group and organizational factors (Jehn & Bezrukova, 2004). Quoting Van Knippenberg and Schippers (2007) "it seems time to declare the bankruptcy of the main effects approach and to argue for models that are more complex and that consider moderating variables in explaining the effects of diversity" (pp. 518-519).

In support of this proposition, some studies found that diversity is more likely to yield performance benefits in non-routine task environments (Hambrick, Cho, & Chen, 1996). Jehn, Northcraft, and Neal (1999) found that intra-team conflict mediates the relationship between informational diversity and team performance. In line with this analysis, Van der Vegt and Bunderson (2003) found that team learning behavior acts as a (partial) mediator between expertise diversity and team performance. Other potential moderators and mediators were analized, like reflexivity (Schippers et al., 2003) or external communication (Ancona & Calwell, 1992), and the results found provided some further support to a contingency perspective of diversity.

In the present study we will consider diversity across two demographic dimensions that are relevant for team functioning: tenure in the team and tenure in the function. Because those variables are significantly related to the task (Jackson, May, & Whitney, 1995) and we are considering teams that perform complex tasks, we expect to find a positive, although – as a result of previous studies – weak, effect of diversity on team outcomes. Thus, we predict that:

Hypothesis 1: Diversity will have a positive significant effect on members' satisfaction with the team (Hypothesis 1a) and on team performance (Hypothesis 1b).

Group Culture

In line with Stott and Walker (1995), we consider organizational culture as one of the most powerful determinants of performance. As a set of meanings or understandings shared by individuals that integrate organizations and groups, establishing the way the things are done, organizational culture will necessarily influence the way teams achieve their goals (Schein, 1985, 1996).

Analizing culture at the group level, and not only at the organizational level, is important because within organizations, different group cultures could subsist. In fact, it is very difficult that an organization will be as homogeneous to the point of conveying, strengthening, and maintaining a single culture. As noted by Maanen and Barley (1985), "unitary organizational cultures evolve when all members of an organization face roughly the same problems, when everyone communicates with almost everyone else, and when each member adopts a common set of understandings for enacting proper and consensually approved behavior" (p. 37). Thus, the workgroup can be considered a subculture of a broader culture that is the organization (Adkins & Caldwell, 2004; Brown, 1998; Cook & Yanow, 1996; McAleese & Hargie, 2004; Palthe & Kossek, 2003; Sackman, 1992).

Elements of group cultures include shared values and knowledge, standard operating procedures and norms about patterns of group members' behaviors (Chatman & Jehn, 1994; Jehn & Bezrukova, 2004). It is culture that dictates the norms and values adopted by the group and that differentiates one group from another.

In this paper, in particular, we will focus our analysis specifically on the cultural orientation towards learning. Learning can be defined as a change in the range of an entity's potential behaviors through the processing of information (Huber, 1991). Just like individual learners, teams also have to receive, manage, and retrieve information to meet the standards and the demands of an increasingly turbulent market (Van Woerkom & Van Engen, 2009). Hence, as people learn by modifying their behavior and attitudes to meet external requirements, teams also learn by adapting their strategies and modes of operating to internal and external demands. The team ability to learn is, thus, a crucial element of adaptation and competitive advantage, with significant effects on team effectiveness (Berends, Boersma, & Weggeman, 2003; Edmondson, Dillon, & Roloff, 2007; Fiol & Lyles, 1985; Khandekar & Sharma, 2006; Murray & Carter, 2005; Oliver & Kandadi, 2006; Lines, 2005; Sense, 2004).

A learning culture can be conceived of as an orientation towards the promotion, facilitation, sharing, and dissemination of individual learning in order to contribute to the organization's development. This type of culture must, therefore, promote a culture of openness, where people are not afraid of experimentation and where mistakes are seen as a way to improve (Rebelo & Gomes, 2011a).

Different authors have attempted to clarify the different characteristics and properties that define the culture of learning as a particular kind of organizational culture (Ahmed, Loh, & Zairi, 1999; Hill, 1996; Marsick & Watkins, 2003; Schein, 1992). Nonetheless, as noted by Rebelo and Gomes (2011a), there are various points of convergence between the different approaches, such as: learning as one of the organization's core values; orientation towards people; concern for all stakeholders; tolerance of the diversity of opinions and people; encouragement of experimentation and of attitudes of responsible risk; tolerance of mistakes and the ability to learn with them; commitment and support for leadership; promotion of an intense and open communication. Similarly, a team's orientation towards learning is guided by some specific behaviors, which include, among others, seeking feedback, sharing information, asking for help, speaking about the errors, and also experimentation (Bunderson & Sutcliffe, 2003; Edmondson, 1999, 2002).

The learning culture model proposed by Rebelo and Gomes (2011a) is in line with these points of convergence between the other models presented in literature and, in addition, distinguishes two interrelated dimensions of a learning culture: internal integration and external adaptation. These two dimensions are related to two fundamental problems that workgroups and organizations have to face to be effective: the integration of the internal processes and the adaptation to the external environment (Schein, 1992). Thus, management policies, rewards, training, leadership, common goals, and valorization of action will be associated with internal integration, whereas characteristics such as error tolerance, valorization of risk, orientation for the future, openness, autonomy, and orientation to the external environment are inherent to external adaptation. From

the conceptual point of view, this bi-dimensional structure has a high interpretability, since thinking about learning culture in terms of these two processes has implications for the way we consider how organizations and groups deal with learning issues. In fact, it emphasizes the importance of a close relationship between both dimensions, leading to the idea that the organization and the groups, internally, should be actively structured, committed, and learning-oriented to respond effectively to the external environment, customers, and other stakeholders, in order to ensure viability, as suggested by the literature on learning organizations (e.g., Salaman, 2001).

The positive impact of a learning culture on organizational performance is already well established in the literature (e.g., Egan et al., 2004; López et al., 2004; Yang, 2003). What interests us now is to try and figure out whether a team culture that encourages proactive learning and the development of competencies among their members will foster team performance and satisfaction. In the literature, there is some evidence that a team's orientation towards learning can have positive consequences on team effectiveness (e.g., Bunderson & Sutcliffe, 2003). Therefore, we predict that:

Hypothesis 2: A team's cultural orientation towards learning (internal integration and external adaptation) will have a positive effect on members' satisfaction with the team (Hypothesis 2a) and on team performance (Hypothesis 2b).

Moreover, we will consider the effect of the team's cultural orientation towards learning on the relationship between diversity and team effectiveness. We argue that diversity in terms of knowledge and expertise will foster effectiveness when the group is highly oriented to the promotion and sharing of learning. Therefore, we predict that:

Hypothesis 3: A team's cultural orientation towards learning (internal integration and external adaptation) will moderate the relationship between team diversity and members' satisfaction with the team (Hypothesis 3a) and team performance (Hypothesis 3b), such that groups with a culture highly oriented towards learning will benefit more from diversity than teams with a culture that is less oriented toward learning.

The conceptual model upon which this study is based is depicted in Figure 1.

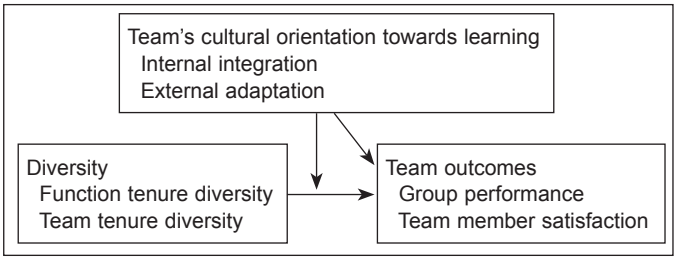

Figure 1. Conceptual model.

Method

Participants and Procedure

We employed a cross-sectional design in which we surveyed teams from a wide range of organizations. Because the nature of the tasks performed by the teams is one of the variables that can affect the way culture and diversity influence team effectiveness (e.g., Hambrick et al., 1996), we decided to survey only teams that perform complex tasks, that is, tasks that require problem solving, have a small set of standardized procedures, and have a relatively high degree of uncertainty (O' Reilly, William, & Barsade, 1998).

A database of the 500 largest companies active in Portugal, published in a national magazine, as well as searches on the Internet, were used to identify the companies for our research. In the first step of the data collection, we sent a letter explaining the purpose of our study and informing that all companies would receive a feedback report on their company's group dynamics, as well as a report containing the results of the global study. To the companies that returned the contact asking for more information, we sent the research project where we explained, in detail, our goals and what we intended from the collaboration. Twenty-four companies agreed to participate in this study (which as a percentage means a participation rate of about 8%). All companies except one were from the private sector. Twenty companies were medium companies and 4 were large companies. The majority (18 companies) were services companies (e.g., consultancy firms, a company from the audio-visual sector) and 6 were industrial companies (e.g., a metal company, chemical company).

Meetings with a member of the company's top management team (in general, the human resources manager) allowed us to identify the teams to survey, which had to meet the following criteria: (1) teams must be constituted at least by 3 members, (2) who are perceived by themselves and others as a team, and (3) who interact regularly, in an interdependent way, to accomplish a common goal.

In each company, we had to collect two kinds of information: the team members' questionnaires and the team leaders' questionnaires. Team members were surveyed about demographic data, group learning culture, and satisfaction with the team; team leaders were asked to evaluate the team through a set of performance indicators.

The questionnaires were personally handed over by a member of the research team, in the facilities of each organization, during working hours. Verbal instructions were given, individual anonymity was ensured, and it was emphasized that the data would be aggregated. The information concerning anonymity and confidentiality was also given in the front page of the survey. Questionnaires had no individual identification and demographic information was reduced to the minimum to assure confidentiality. In most organizations, the questionnaires were answered in the presence of the researcher, in a room assigned for this effect, and were returned when completed. When the questionnaires could not be carried out in the presence of the researcher, they were personally delivered in envelopes (instructions were given at this moment), and collected one week later. Employees answered the questionnaire voluntarily; there were no consequences for answering the questionnaire, neither positive nor negative.

Surveys were administered to 549 members of 73 teams; 414 members returned their surveys but 11 were excluded because at least 10% of the answers were missing. In this way, the responses from 403 participants were considered, who were members of 73 teams (in all teams at least 60% of the team members completed the questionnaire). Teams were composed of 12 members on average (SD = 7.3), 49.5% of the respondents were male, the mean age was 37.8 years (SD = 9.6), and the majority were of Portuguese nationality (95%). The respondents had, on average, 96.1 months of work experience within the current team (SD = 95.8) and 140.1 months of experience in the current function (SD = 95.8). Finally, 50.7% had a higher education background.

With respect to the leaders' surveys, 68 questionnaires were returned and considered valid. Leaders were, on average, 39.6 years old (SD = 8.1) and 54.5% were male. The leaders had, on average, 87.3 months of work experience within the current team (SD = 80.6) and 116.1 months of experience in the current function (SD = 92.6). Finally, 78.8% of the leaders had a higher education background.

Measures

Diversity. Since the diversity dimensions considered in the present study – tenure in the function and tenure in the team – were continuous, the coefficient of variation was used to determine the extent to which team members differed from each other (Allison, 1978).

The team's cultural orientation towards learning. To measure the team's orientation towards learning we adapted the OLC (Organizational Learning Culture) questionnaire (Rebelo & Gomes, 2011b) to the group level. OLC is a 5-point Likert scale (ranging from 1, *hardly applies*, to 5, *almost totally applies*) that measures the organizational orientation towards learning via 20 items. Several studies on this scale supported its good psychometric qualities and pointed to the existence of two inter-correlated factors or dimensions: the first dimension, Internal Integration, is related to the way internal processes, such as communication and leadership, are managed in the organization; the second dimension, External Adaptation, is related to the orientation of the organization to the environment, i.e., the organization's ability to learn from the outside and to correspond to its demands.

Since this scale evaluates culture at the organizational level, and in this study we intend to measure culture at the team level, all items were reworded to reflect the group, rather than the organization, as the referent. Although the changes that were introduced were not significant, consisting almost exclusively of replacing "organization" with "group" or "employees" with "members", we decided to present the group version of the OLC scale to a panel of experts and to conduct a pre-test with 20 participants. No questions arose regarding the need to change the items.

Members' satisfaction with the team. In accordance with authors like De Dreu and Weingart (2003) and Bradford (1999), we define members' satisfaction with the team as the satisfaction level showed by each team member concerning different aspects of group functioning (e.g., quality of the relationship, affective acceptance of team decisions). Thus, to measure satisfaction with the team, we used ESAG (the acronym for the satisfaction with the group scale in Portuguese) developed by Dimas (2007). This scale is composed of seven items that measure members' satisfaction with different aspects related to the task and the affective system of the team. Statements are evaluated in 7-point Likert scales ranging from 1 (*totally dissatisfied*) to 7 (*totally satisfied*). Table 1 shows the items of this scale and of the previous one.

Team performance. Team performance was assessed with EADG (the acronym for the team performance assessment scale in Portuguese) developed by Dimas (2007). This scale is composed of nine items that measure the leaders' perception regarding different issues related to the quality and quantity of work produced by the team (see the Appendix for all items of this measure). Statements are evaluated in a 10-point Likert scale from 1 (*bad*) to 10 (*excellent*).

Results

Validity of Measures

To evaluate the convergent and the discriminant validity of the constructs assessed by team members, we tested, with CFAs using maximum likelihood estimation method (covariance matrix as input), a measurement model with the three measures (internal integration, external adaptation, and satisfaction) as separate constructs (three-factor model).

Using chi-square difference tests (Byrne, 2001), we compared the fit of this model with the fit of a two-factor model and of a single-factor model.

Concerning the three-factor model, although the χ^2 were significant, the other values of fit indexes are admissible (Browne & Cudeck, 1993; Byrne, 2001; Hu & Bentler, 1999), supporting an acceptable fit of the three-factor model to the data. As shown in Table 1, all the indicators loaded acceptably on their predicted factors (above .50), indicating convergent validity (Kline, 2005).

However, since the estimated correlation between the two dimensions of the team's cultural orientation towards learning is high, albeit an expected relation due to the interdependence of the two constructs, in order to assure their distinctiveness we conducted

Table 1
Standardized Loadings and Estimated Correlations between Factors of CFA for the Three-factor Model

Factor	Item	Loading
Internal Integration	. Leaders encourage the search for solutions by their subordinates (team members).	.79
	. We have the habit of sharing information and knowledge.	.74
	. The leader gives the "green light" and supports the implementation of some suggestions of his subordinates.	.73
	. There is the habit of talking within the group about how to solve problems that arise.	.71
	. People are informed about group objectives.	.71
	. Leaders are available and interested in listening to team members' suggestions for improvement.	.69
	. Failures are seen as an opportunity to try new ways of working.	.69
	. People are encouraged to grow and develop in their careers.	.68
	. There is a climate of trust and respect, where the group members listen to what others say, even if they are critical.	.67
	. Contact between the leader and any team member is easy.	.57
	. Those who contribute to ideas and solutions towards the improvement of work processes are considered the best employees.	.53
	. People are also paid for thinking.	.52
External Adaptation	. Criticisms that are made to the group are carefully analysed in order to improve.	.82
	. We know it is important to contribute with innovative ideas for the improvement of work processes.	.79
	. There is a belief that people can, and want to, learn to improve.	.77
	. We recognize it is important to know the way other groups work so as to do better than them.	.74
	. We are aware that the work of one group depends on the work of other groups, and vice-versa.	.70
	. We know that a good relationship with the other groups of the organization is important.	.65
	. We know that if we do quality work, the success of the company will be ensured.	.65
	. We are aware that without clients there is no salary or stability.	.51
Satisfaction	. Team functioning.	.89
	. Team climate.	.88
	. Relationships between team members.	.80
	. The role that each member has in the team.	.78
	. The way the leader organizes and coordinates the team activities.	.73
	. Relationship between team members and the leader.	.72
	. Results achieved by the team.	.68

a CFA to test a two-factor model where all the items of these two constructs were specified to measure only one factor (two-factor model).

As we can see in Table 2, the fit of the three-factor model is clearly better than this one and better than the fit of the single-factor model (where all the items of the three measures loaded on one unique factor), which revealed a very poor fit. Moreover, the chi-square difference tests indicate significant improvement in the fit of each more differentiated model (single-factor model and two-factor model: $\Delta\chi^2(3) = 913.87$, $p < .001$; two-factor model and three-factor model: $\Delta\chi^2(3) = 213.43$, $p < .001$).

Table 2
Goodness-of-fit Indices of the Measurement Models Tested ($N = 398$)

	χ^2	*df*	χ^2/df	CFI	RMSEA	90% Confidence Interval
Single factor	2112.57***	326	6.48	.73	.117	.113-.122***
Two factor	1198.70***	328	3.70	.86	.082	.077-.088***
Three factor	985.27***	319	3.08	.90	.073	.067-.078***

*$p < .05$, **$p < .01$, ***$p < .001$

Based on the results of these analyses, the constructs will be treated separately in the tests of our hypotheses. The reliability of the three factors, estimated by Cronbach's alpha, is adequate (as can be seen in Table 3 below).

Concerning the team performance measure, due to the fact that this scale was answered only by the team leaders, the size of this sample ($N = 68$ teams) is too small to use CFA (Kline, 2005). In face of this limitation, principal component analysis was carried out, revealing only one dimension composed of nine items ($\alpha = .93$). This solution explains 64.52% of the total variance. All the nine items (see Appendix) have loadings above .70 and communalities above .50.

Test of Hypotheses

Analyses included individual and team-level constructs. To examine whether the data justified aggregation of team-level constructs, the Average Deviation Index (AD_M Index) developed by Burke, Finkelstein, & Dusig (1999) was performed. Following the authors' recommendations, we used the criterion $AD_M \leq 0.83$ to aggregate, with confidence, individual responses to the team level. The average AD_M values obtained for internal integration and external adaptation were, respectively, 0.56 and 0.57. These values were below the upper-limit criterion of 0.83, revealing that the level of within-team agreement was sufficient to aggregate team members' scores.

Additionally, to check whether aggregation was justified we also computed the intraclass correlation coefficients ICC(1) and ICC(2) (Bliese, 2000). ICC(1) for internal integration and external adaptation was .15 and .12, respectively. Both values are similar to what is found in the literature (e.g., values in the range of .05 to .20 were found by Bliese, 2000). Therefore, we concluded that the level of consistency of responses among team members in both scales was adequate. The ICC(2) obtained were .50 for internal integration and .45 for external adaptation. Both values are near the values considered acceptable (.50 in accordance with Klein and Kozlowski, 2000), indicating that the team means are reliable enough.

To test our hypotheses, two different types of analyses were conducted: hierarchical linear modelling (HLM) was conducted to determine the effects of the predictors on the individual level outcome under analysis (members' satisfaction with the team) and hierarchical regression was computed to determine the effects of those constructs on the team level outcome analized (team performance).

Results concerning the individual level outcome and the team level outcome are presented separately in the next sections.

Individual-level outcome analysis. Table 3 presents the descriptive statistics and the intercorrelations concerning the individual-level outcome analysis. In the present study, team size was a control variable because the literature on groups has noted that size is a key variable influencing group dynamics and performance (Brewer & Kramer, 1986) and because larger teams have more potential for heterogeneity (Bantel & Jackson, 1989). Due to the fact that the consequences of the presence of some types of diversity may be affected by the presence of other types, the diversity of age, gender, and education constituted also control variables (because the last two variables were categorical variables, the standardized form of the index proposed by Teachman, 1980 was used to assess work group diversity).

As expected, and with the exception of team tenure diversity (which was excluded from further analysis), all predictors considered in the present study were positively correlated with team member satisfaction ($r = .15$, $p = .003$ for function tenure diversity; $r = .61$, $p < .001$ for internal integration; $r = .56$, $p < .001$ for external adaptation).

From the correlations with the control variables, we can see that significant positive correlations exist between team size and internal integration ($r = .11$, $p = .025$) and external adaptation ($r = .13$, $p = .011$) and that diversity concerning the level of education presented a positive relationship with internal integration ($r = .11$, $p = .025$) and a negative one with members' satisfaction with the team ($r = -.12$, $p = .016$). Following Becker's (2005) recommendation to omit potential control variables that are uncorrelated with the variables of interest, we dropped age and gender diversity from the following analyses. The nested hierarchical analysis was computed on R software (version 2.13.0) (R Foundation for Statistical Computing, 2011).

Table 3
Descriptive Statistics and Intercorrelations – Individual-level Outcome Analysis

	M	*SD*	1	2	3	4	5	6	7	8	9
1. Team size	11.75	7.34	--								
2. Age diversity	.20	.08	.13*	--							
3. Gender diversity	.46	.43	-.06	-.09	--						
4. Level of education diversity	.30	.26	-.02	.14**	-35**	--					
5. Function tenure diversity	.65	.27	.04	.35**	.03	-.01	--				
6. Team tenure diversity	.80	.39	-.07	.27**	.00	.10*	.41**	--			
7. Internal Integration	3.73	0.66	.11*	.04	.03	.11*	.14**	.04	(.90)		
8. External adaptation	3.87	0.69	.13*	.08	-.04	-.06	.11*	-.09	.80**	(.89)	
9. Members' satisfaction with the team	5.38	0.85	.03	.04	.05	-.12*	.15**	.06	. 61**	.56**	(.92)

Note. The values presented are based on a sample of 398 respondents. Cronbach's alphas are provided in parentheses on the diagonal.
*$p < .05$, **$p < .01$

First, it is necessary to examine the intercept variability (γ_{00}) by estimating an unconditional means model (or null model). An unconditional means model does not contain any predictors, but includes a random intercept variance term for groups (Bliese, 2009). If γ_{00} does not differ by more than chance levels, the assumptions of OLS regression techniques are not violated and there is no need for HLM analyses.

Results for satisfaction revealed that 21% of the variation in individuals' satisfaction score is a function of the group to which he or she belongs, ICC(1) = .21. Then, one must determine whether γ_{00} is significant by comparing the -2 Log likelihood (-2LL) values between (1) a model with a random intercept, and (2) a model without a random intercept. The -2LL value for the model with the random intercept (-2LL = 967.58) was significantly smaller on a chi-square distribution than the model without the random intercept (-2LL = 1001.86). Therefore, a model that allows for random variation in satisfaction among workgroups is better than a model that does not allow for this variation.

The test of hypotheses 1a, 2a and 3a is reported in Table 4. In order to correct the multicollinearity that can arise when testing moderated relationships, all predictors were centred before the interaction terms were generated, following a procedure proposed by Cohen, Cohen, West, & Aiken (2003). Team size and diversity concerning the level of education was used as a control variable and entered in the equation as the second step. In the third step, function tenure diversity was entered, whereas in the fourth step both dimensions of team culture were entered in the equation. Finally, in the fifth step we entered the interaction terms.

Hypothesis 1a concerned the positive effect of diversity on members' satisfaction with the team. As can be seen, the positive effect of function tenure diversity on members' satisfaction with the team is just marginally significant (B = 0.38, p = .06). Thus support, albeit weak, was found for the hypothesis under analysis.

Hypothesis 2a concerned the positive effect of both dimensions of the team's orientation towards learning on members' satisfaction. This hypothesis was supported as the internal integration was shown to have a significant positive effect on members' satisfaction (B = 0.55, p = .01) as well as external adaptation (B = 0.41, p = .05).

Finally, in hypothesis 3a a moderating role of the team's learning culture on the relationships between diversity and members' satisfaction was predicted. The analysis of model 5 showed, however, the inexistence of moderated effects. Thus no support was found for this hypothesis.

Team-level outcome analysis. Descriptive statistics and intercorrelations concerning the team-level analysis are presented in Table 5.

As can be seen, the correlation between internal integration and performance is positive and significant (r = .37, p = .003), as also the correlation between external adaptation and performance (r = .43, p

Table 4
HLM Results for Members' Satisfaction with the Team

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
	Coefficient (*SE*)	Coefficient (*SE*)	Coefficient (SE)	Coefficient (*SE*)	Coefficient (*SE*)
Intercept	5.39 (0.06)***	5.37 (0.11)***	5.37 (0.11)***	5.48 (0.08)***	5.51 (0.08)***
Team size		0.01 (0.01)	0.01 (0.01)	-0.01 (0.01)	0.01 (0.01)
Level of education diversity		-0.40 (0.25)	-0.40 (0.25)	-0.19 (0.19)	-0.21 (0.18)
Function tenure diversity (FD)			0.38 (0.20)†	0.14 (0.17)	0.18 (0.17)
Internal Integration (II)				0.55 (0.21)**	0.48 (0.21)*
External adaptation (EA)				0.41 (0.20)*	0.45 (0.21)*
FD*II					0.12 (0.66)
FD*EA					-0.76 (0.65)
σ^2	0.57	0.57	0.57	0.57	0.57
γ_{00}	0.15	0.15	0.14	0.04	0.03
(-2LL)	967.58	973.40	971.35	936.72	933.16

Note. Individual-level sample size = 398 (nested in 71 workgroups). Unstandardized coefficients are reported with standard errors in parenthesis.
†p < .10, *p < .05, **p < .01, ***p < .001

Table 5
Descriptive Statistics and Intercorrelations – Team-level Analyses

Variables	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Team size	7.32	5.4	--								
2. Age diversity	.20	.09	.12	--							
3. Gender diversity	.45	.45	.01	.08	--						
4. Level of education diversity	.27	.25	.04	.05	-.14	--					
5. Function tenure diversity	.63	.33	.07	.35**	.05	-.07	--				
6. Team tenure diversity	.77	.43	.06	.18	-.11	.14	.43**	--			
7. Internal Integration	3.67	.44	.23	.16	.14	-.16	.27*	.11	--		
8. External adaptation	3.84	.45	.18	.23	.12	-.16	.24	-.06	.81**	--	
9. Team performance	7.35	1.03	.27*	.13	.05	-.18	-.03	.06	.37**	.43**	(.93)

Note. The values presented are based on a sample of 68 teams.
Cronbach's alpha for team performance is provided in parentheses on the diagonal.
*p < .05, **p < .01

< .001). However, no significant relationships were found between diversity and performance. Hence, hypothesis 1b and hypothesis 3b could not be supported.

Concerning the control variables, a significant positive correlation was identified between team size and performance (r = .27, p = .03). The remaining control variables were dropped from the following analysis.

To test hypothesis 2b a hierarchical regression analysis was conducted. In the first step, team size was entered and in the second step both dimensions of the team's orientation towards learning were entered. Results are shown in Table 6.

Table 6
Hierarchical Regression Analysis with the Team's Cultural Orientation Towards Learning predicting Performance

	Performance				
Variables	*B*	*SE*	β	R^2	ΔR^2
Step 1				.07*	
Team size	.05	.02	.27*		
Step 2					.15**
Team size	.04			.22**	
Internal integration		.02	.19		
External adaptation	-.01	.44	-.00		
	.91	.42			
			.40*		

*p < .05, **p < .01

As we can see, the positive effect of external adaptation on team performance was significant (β = .40, p = .04), whereas no effect of internal integration on team performance was identified. In this way, partial support for hypothesis 2b was found.

Discussion

The central aim of the present research was to contribute towards clarifying the role of diversity and of the team's cultural orientation towards learning in team success.

Results revealed that teams composed of people with different levels of experience in the function presented higher levels of satisfaction. However, this positive effect was only significant considering a less conservative level of significance (i.e., .10). For that reason, when considered alone, diversity is not a powerful predictor of effectiveness. In fact, concerns about the management of diversity tend to weigh more in theory than in reality. These results are in line with most of the empirical studies developed in this area (e.g., Ely, 2004) and reinforce the idea that the impact of diversity on team effectiveness is not significant and consistent. Thus, our findings are in line with the branch of literature that argues that when we intend to create successful teams, diversity is not a variable to take into consideration. Moreover, even when moderated variables, such as the team's learning culture, are considered, results tend to show no significant effects.

Contrary to diversity, the team's cultural orientation towards learning seems to be a strong determinant of the affective dimension of effectiveness. Hence, our findings show that when teams are oriented towards the acquisition and dissemination of knowledge, individuals are more satisfied with the team.

However, concerning team performance, results for the effects of both dimensions of the team cultural orientation towards learning were not in the same direction. Therefore, whereas external adaptation presented a positive and statistically significant effect on team performance, no effect of internal integration was found. External adaptation concerns the orientation of the team to the environment, its ability to take risks, to experiment new ways of working, and to learn from others outside the team. When people are encouraged to experiment and to innovate, it is expected that the levels of team performance increase. Internal integration, on the other hand, is related to the support given by the team to learn and to develop individual and team skills. In a team with higher levels of internal integration, team members will feel more supported and more satisfied with the way the team works and with the relationships between members, as well as with the leader. However, the results show that this kind of support is not sufficient to directly improve the levels of performance of the team. Nevertheless, it is important to mention that our findings also point to a significant positive correlation between internal integration and team performance and a relationship between the two dimensions of the group's learning culture. Thus, if we take together these results and the results of the regression carried out, they could be understood as indicating a meditational effect of external adaptation on the relationship between internal integration and team performance. If so, it indicates that the learning support within a team influences the team's orientation to learn from the outside, to improve and innovate, which, in turn, leads to higher performance. This suggestion, as well as the study of other moderators of the relation between team diversity and team effectiveness, such as the level of conflict within the team and the way conflicts are handled, could be included in future research.

As with most studies, the current research has several shortcomings. Our studies relied upon self-report measures, and as a consequence, run the risk of potential common method variance. This risk is, however, greater in studies where attitude–attitude relationships are considered (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) than in our study: for instance, in the team learning culture scale respondents are asked about situations that are happening in the team and not about attitudes. To attenuate this threat, in the design of the study different procedures were also considered: different scale anchors and formats were used to measure predictor and criterion variables; items were carefully constructed; respondent anonymity was protected (op. cit.). Moreover, the evaluation of the construct validity of the measures provides evidence for the fact that this effect is controlled (Conway & Lance, 2010). Finally, our results were aggregated to the team level, a procedure that can attenuate this threat (Conway, 2002).

The relatively small sample may also limit some analyses, particularly the moderator analyses at the team level. Beyond the small sample, and according to Lubinski and Humphreys (1990) and also Evans (1985), the existence of moderator effects is often harder to demonstrate in a field context than in a laboratory setting. And lastly, the cross-sectional nature of our research is a barrier to state the causal direction of the hypothesised relationships. Thus, although the present study leads to some interesting findings, they should be considered in the light of these shortcomings and tested in further research.

Conflict of Interest

The authors of this article declare no conflict of interest.

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Appendix

Team Performance Measure

1. Ability to take a sufficient approach to problems.
2. Defining strategies with the achievement of fixed goals in mind.
3. Quality of work produced.
4. Efficiency in the carrying out of tasks.
5. Quantity of work produced.
6. Quality of new ideas/suggestions put forward.
7. Ability to implement new ideas.
8. Achieving fixed deadlines.
9. Number of new ideas/suggestions put forward.