

European Master on Work, Organizational, and Personnel Psychology

Master Thesis

Team resilience and team effectiveness: the mediating role of team learning behaviors

Cláudia Rocha

Faculdade de Psicologia e de Ciências da Educação

Universidade de Coimbra



Home tutor:

PhD. Isabel Dórdio Dimas

Faculdade de Psicologia e de Ciências da Educação

Universidade de Coimbra



VNIVERSITAT ID VALÈNCIA

Host tutor:

PhD. Ana Zornoza

Facultat de Psicologia

Universitat de Valencia

Coimbra, 29th May 2018

Title of the research project:

Team resilience and team effectiveness: The mediating role of team learning behaviors

Keywords:

Team Resilience; Team Effectiveness; Team Learning Behaviors

Author:

Cláudia Rocha

Faculdade de Psicologia e de Ciências da Educação

Universidade de Coimbra

claudiaferreirarocho@hotmail.com

Home tutor:

PhD. Isabel Dimas

Faculdade de Psicologia e de Ciências da Educação Universidade
de Coimbra

idimas@ua.pt

Host tutor:

Ana Zornoza

Facultat de Psicologia

Universitat de Valencia

Ana.Zornoza@uv.es

ABSTRACT

Framework: Team effectiveness is one of the most important constructs in the organizational world, as it helps companies to develop new ways of achieving their goals. In this paper, our focus was on the conditions that can lead to teamwork effectiveness.

Purpose: The purpose of the current study was to examine the mediating role of team learning behaviors in the relationship between team resilience on overall team effectiveness criteria: team performance, team viability, quality of group experience and team process improvement and the effects of team resilience on team learning behaviors.

Method: This study adopted a cross-sectional design and was conducted at the team level of analysis where 535 individuals from 90 teams were surveyed. Hypotheses were tested through mediation analysis.

Results: The results showed a positive relationship between team resilience and team learning behaviors. Moreover, our results revealed that team learning behaviors act as mediator variable between the input (team resilience) and the outcome (team effectiveness in the four criteria analyzed).

Conclusion: Our findings emphasized the importance of team resilience and of team learning behaviors on team effectiveness. Therefore, team resilience and team learning behaviors contribute to organizations becoming more effective in the achievement of their goals.

Acknowledgements

To my Tutor, Professor Isabel Dimas, thank you for your profound dedication and determination along of these past two years. For the unconditional support and knowledge sharing, in order to improve me and my work, especially my thesis. I am really thankful for all the support and time dedication.

To professor Paulo Renato and Professor Teresa Rebelo, my sincere gratitude for the support, the long hours of statistic analysis and the knowledge sharing.

To my parents, Manuel Jorge and Zélia Gomes for the patience to deal with me when I was going through a bad time. Both of you gave me strength, support, and courage to be a better person and always face life. Thank you for being my parents and always be there for me.

To my brother, Jorge Rocha, for the patience to deal with me when I am in a bad mood.

To my uncles, Fernando e Rosa, and my cousins, Mena e Zé, who always share their knowledge, trust and kindness with me.

To my master friends, especially to Aline and Maria, who help me improve my English. To Iolanda and Joana, who faced this challenge with me. To all of them – Aline, Estela, Matilde, Maria, Joana and Iolanda - who supported me in this phase of my life and incentivized me to be better. *“Daqui é só para cima!”*

Thank you to everyone who supported me to continue on this path.

The mediating role of team learning behaviors

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Introduction

Teams or groups can be perceived as complex, adaptive and dynamic systems that are embedded in organizations (Ilgen, Hollenbeck, Johnson, & Jundt, 2005).¹ Although the literature presents several definitions of a team, in this paper, teams are conceptualized as a set of interdependent individuals in their tasks who share responsibility for their products (Hackman, 1987).

Nowadays, teams are omnipresent in organizations (Cohen & Bailey, 1997; Decuyper, Dochy & van den Bossche, 2010; Lawler, Mohrman & Ledford, 1995) and are conceptualized as organizations learning unit (Caldwell & O'Reilly, 2003; Decuyper et al., 2010; Kirkman, Rosen, Tesluk & Gibson, 2004). Thus, the learning process is conditioned by the social contexts in which the individual is embedded. Teams allow individuals to establish social relationships through task exchange and then team members share and exchange information, ideas, and knowledge, learning, as a consequence, together (Sessa & London, 2012). Therefore, team learning behaviors can be set as a continuous process of reflection and action, characterized by asking questions, seeking feedback, experimenting, reflecting and discussing errors and/or results from previous tasks (Edmondson, 1999).

Resilience is a relevant construct to increase well-being and effectiveness at an individual, group and organizational level (Alliger, Cerasoli, Tannenbaum & Vessey, 2015). Resilience can provide insight into the positive adjustment and/or adaptability of people, teams and organizations under challenging conditions (Sutcliffe & Vogus, 2003). It can be described as the ability to overcome difficult situations and continuing to function normally (Meneghel, Martínez & Salanova, 2016; Meneghel, Salanova & Marti'nez, 2014; Vanhove, Herian, Perez, Harms & Lester, 2015). As for team resilience consist into the process of healthy functioning in the face of adversity, conflicts and any others threats (Bonanno, 2004; Luthar, Cicchetti & Becker, 2000; Vanhove et al., 2015).

Regarding team effectiveness, this construct must be considered as a multidimensional concept (Hackman, Wageman, Ruddy & Ray, 2000) which is "not context-free". Thereby team effectiveness depends on situational factors that surround the organizational environment. For instance, the meaning of effectiveness can change according to what the evaluator perceives as effectiveness. The concept can be interpreted in different forms, leading to different values, expectations, and representations (Lourenço, 2002).

In this study, we focus on the mediating role of team learning behaviors in the

¹ In this study, we will consider teams and groups as synonyms (Allen & Hecht, 2004; Guzzo, 1996).

The mediating role of team learning behaviors relationship between team resilience and team effectiveness. Learning behaviors have been found to be related to team effectiveness since they allow people to share and learn new behaviors, improving their productivity and therefore their effectiveness in the workplace (Cohen & Bailey, 1997; Órtega, Sanchez- Manzanares, Gil & Rico, 2010; Wong, 2004).

In the field of Industrial-Organizational (I-O) psychology resilience, learning behaviors and effectiveness are very important since both of them can be analyzed at the organizational and team level. Thus, organizations can develop a directory of information or knowledge management repertoire about group members as individuals and about their skills to work together (Sessa & London, 2012). Therefore, it is important to establish mechanisms which contribute to teams and organizations to achieve their goals and improve their productivity (Edmonson, 1999; Órtega et al., 2010; Wong, 2004), through learning new ways to improve team members' interactions, detecting and correcting errors, finding new opportunities, achieving standards of quantity, quality, and the performance goals (Hackman & Wageman, 2005; Sessa & London, 2012).

The present study adopted as a framework the Input-Mediator-Outcome-Input (IMOI) approach (Ilgen et al., 2005). The IMOI model emphasizes the fact that teams and groups are complex and dynamic systems in the organizational context (Ilgen, et al., 2005). The IMOI refers to the need for feedback between variables, implying continuity in the system (Ilgen et al., 2005). The IMOI model recognized a multilevel system in organizations (individuals, teams, and organizations) that vary according to the context and the interaction between members over time (Kozlowski & Ilgen, 2006; Paolucci, 2016).

The IMOI model conceptualizes the inputs as a composition of the team and/or a set of individual characteristics, resources in a multilevel approach (Kozlowski & Ilgen, 2006; Paolucci, 2016). The mediator reveals the set of psychosocial mechanisms available to achieve the team's goal and it can be either processes or emergent states (Marks, Mathieu & Zaccaro, 2001; Paolucci, 2016; Rico, de la Hera & Tabernero, 2011). The outcomes are the results obtained by the team and they can be operationalized via multiple criteria and dimensions (Kozlowski & Ilgen, 2006; Paolucci, 2016). Finally, the extra "I" summons the notion of cyclical model and the need for feedback. In others words, the outcome can lead to a new input, becoming their own input or antecedent (Mathieu et al., 2008; Paolucci, 2016).

Considering the IMOI model (Kozlowski & Ilgen, 2006), we will study the relationship between team resilience and team effectiveness through the mediating role of team learning behaviors. Team learning behaviors were conceptualized as a process in this mediation

The mediating role of team learning behaviors analysis.

Therefore, team resilience is conceived as an input and therefore an antecedent of team effectiveness, whereas team learning behaviors are viewed as a process since it concerns the behaviors adopted by team members in order to learn and assumes a mediating role in the model. To measure team effectiveness, and considering it as a multidimensional construct (Hackman et al., 2000), the following criteria were used: team performance, team viability, quality of the group experience, and team process improvement (Aubé & Rousseau, 2005; Rousseau & Aubé, 2010). This paper aims to clarify the effects of team resilience on the effectiveness of teamwork, considering the mediating role of team learning behaviors in that relationship.

To conclude, Figure 1 shows the conceptual model upon which this study is based. The following chapters are devoted to the explanation of the theoretical and empirical bases of the proposed model. Afterwards, the participants' procedures are explained, as well as the measures used for data gathering, and the statistical procedures used. Then, the results of the study are presented and discussed, in order to explain how they influence team functioning.

Finally, the present study finishes with a chapter where theoretical and practical implications are discussed and another chapter about the study' limitations and how this line of research can be further investigated.

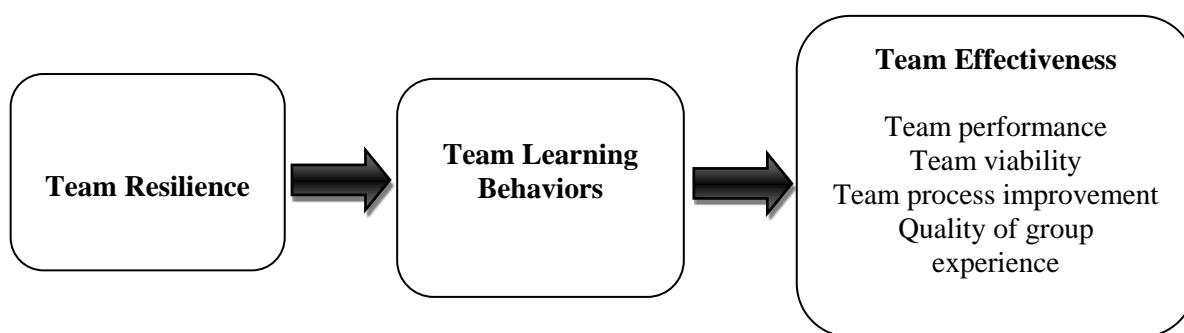


Fig 1. Model under analysis.

Team Resilience

The concept of resilience is one of four psychological dimensions that integrate the higher order construct of psychological capital (along with self-efficacy, hope, and optimism) (Antunes, Caetano, & Cunha, 2013; Luthans, Avolio, Avey & Norman, 2007a; Luthans, Youssef, & Avolio, 2007b; Nunes, 2015). Psychological capital may be considered as a positive, unique, measurable construct that might be developed, having an impact on an individual level (Luthans, 2002). It concerns who the person is and what he/she can become and it focuses on the psychological abilities and individual potential (Antunes et al., 2013).

Resilience has been traditionally investigated at an individual level rather than at the team or organizational level (Alliger et al., 2015). Resilience is perceived as an ability of individuals to maintain stable functioning in the face of a highly stressful or traumatic event (Bonanno, 2004). According to the literature, preventive actions on the individual level have the potential to yield considerable benefits at the organizational level (Alliger et al., 2015; Vanhove et al., 2015). Resilience at an organizational level can unexpectedly explain why an organization survives or thrives (Sutcliffe & Vogus, 2003). In Gittell, Cameron & Lim study (2005) organizational resilience is positively related with positive emotions.

At the team level, resilience can be defined as the capacity of a team to withstand and overcome stressors that enables sustained performance and team cohesion (Alliger et al., 2015). A resilient team will be able to return to normal levels of functioning after a challenge, and also improve and gain more wisdom with experience and practice (Alliger et al., 2015; Salanova, Llorens, Cifre & Martínez, 2012; Stephens, Heaphy, Carmeli, Spreitzer & Dutton, 2013; Tugade & Fredrickson, 2004; West et al., 2009). A team composed of resilient members is not necessarily a resilient team (Alliger et al., 2015). Thus, it is important to consider and study this construct at the team level.

Previous studies found that team resilience is positively related to work engagement (Salanova, Llorens & Schaufeli, 2011) and adaptive coping strategies (Secades, Molinero, Sagüero, Barquín, De la Vegas & Márquez, 2016). West, Patera and Carsten (2009) demonstrated that an adequate amount of interaction at the interpersonal level imparts the perception of a team as capable, successful and engaged in their task. Therefore, with team coordination and cooperation, both positively linked to resilience, it is possible to minimize conflicts (Meneghel et al., 2014; West et al., 2009).

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As reported in the literature, team resilience is positively related to team cohesion (West, Patera & Carsten, 2009), performance (Britt, Shen, Sinclair, Grossman & Klieger, 2016; Meneghel et al., 2016) which is one of the criteria of team effectiveness (Meneghel et al., 2014; Meneghel et al., 2016) and learning, since learning from experience enables adaptability to future challenges (Sutcliffe & Vogus, 2013). Carmeli and Schaubroeck (2008) showed that when people try to learn from failed experiences, the systems tend to work better when facing adversities, becoming more prepared to handle crisis situations (Carmeli et al., 2013).

Resilient teams have the resources and skills to prevent negative effects that came from exposure to stressors and so become more effective (Vanhove et al., 2015). Besides that, these teams “ have the capacity to ” overcome difficult situations so they may use the problem to achieve different solutions and be more effective in their tasks (Alliger et al., 2015; Vanhove et al., 2015). Previous studies found empirical support for the relationship between team resilience and team performance (Meneghel et al., 2014; Meneghel et al., 2016).

In this study, we intend to contribute to clarify the underlying mechanisms through which team resilience translates into team effectiveness, considering the mediating role of team learning behaviors in that relationship.

Team Effectiveness

Team effectiveness is a multidimensional concept (Hackman et al., 2000) and it can be analyzed by different measures depending on the values, interests, preferences of the actors and systems that are in the environment (Dimas, Alves, Lourenço & Rebelo, 2016; Paolucci, 2016). Team effectiveness is “context-dependent”, relying on the situational factors that characterize the organization (Lourenço, 2002).

Team effectiveness, according to the Hackman model (2000), is organized into three dimensions: (1) the degree to which the group outcome matches the patterns of quantity and quality of those who received it, (2) the degree to which the workgroup experience contributes to increasing the ability of members to work together in the future and (3) the degree to which group experience contributes to the professional growth and team members well-being (Hackman et al., 2000).

Accordingly, team effectiveness is more than team performance. Indeed, each of the dimensions of team effectiveness (Hackman et al., 2000) above mentioned should be

The mediating role of team learning behaviors evaluated taking into consideration different criteria. In the present study, team performance, team viability, quality of group experience and team process improvement are the criteria of team effectiveness considered. Team performance can be understood as a team's ability to achieve goals and complete tasks (Mathieu, Maynard, Rapp & Gilson, 2008; Hackman & Wageman, 1995). Team viability is perceived as the ability of a team to adapt and change externally and internally while keeping the group structure stable over time (Aubé & Rousseau, 2005). Quality of group experience reflects the team members' point of view about the common social environment and the quality of the social relations in the workplace (Aubé & Rosseau, 2005).

Finally, team process improvement can be defined as the ability of the team to promote development and innovative solutions and improve task results (Rosseau & Aubé, 2010). In the present study, team performance will be analyzed as a measure of the first dimensions such as team process improvement. Team viability will be studied as a second dimension. In order to access the third dimension of team effectiveness, quality of group experience will be considered.

Previous studies in I-O psychology found support for the positive relationship between team resilience and team performance (Britt, et al., 2016; Luthans et al., 2007a; Luthans et al., 2007b; Meneghel et al., 2016; Pessoa, 2016; Salanova et al., 2012). A positive relationship between team resilience and team effectiveness was found in the study of Van den Bossche, Gijsselaers, Segers and Kirschner (2006). In the study, team effectiveness was measured through team performance, team viability and team learning (Van den Bossche et al., 2006). In Pessoa study (2016) a positive relationship between team resilience and team process improvement was found. In the same study, team resilience and quality of group experience also revealed a positive relationship.

According to Carmeli et al., (2013) resilient teams are more flexible and able to adopt adaptive responses to adversity. Resilient teams are able to grow with challenges and then develop new opportunities for them. Hence, it is expected that teams with a high level of resilience will have higher performance than others, since resilient teams tend to be more flexible, and to use setbacks as challenges or opportunities for growth (Carmeli et al., 2013; Meneghel et al., 2014; West et al. 2009). Teams that thrive in situations of adversities and adapt to significant changes tend to recover faster from a negative experience and to endure less negative effects, increasing their performance (West et al., 2009). Therefore, skills can be

The mediating role of team learning behaviors developed in order to respond to the realities changes, the rise of opportunities and better results (Longstaff, 2005).

We also expect a high relation with team viability since high levels of resilience show that a person is able to adapt quietly to any situation that appears. That means when a team is resilient, team members can be innovative and work in a favorable environment since the normal functioning of the team is preserved (Hambrick, 1994 cited in Stephens et al., 2013).

The development of team resilience increases organizational effectiveness since it affects the results, quality and productivity of team' members (Pessoa, 2016; Sutcliffe & Vogus, 2003).

Team Learning Behaviors

Team learning is relevant to teams because it stimulates the adoption of more appropriate ways of developing the tasks. Through learning, teams became more capable of facing the continuous changes in the environment (Decuyper et al., 2010; Senge, 1990; Zaccaro, Ely & Shuffler, 2008). To be competitive in the global market, organizations stimulate team members to acquire knowledge and learn new behaviors (Shuffler, DiazGranados & Salas, 2011). Teams are considered the learning unit in the organization (Caldwell & O'Reilly, 2003; Decuyper et al., 2010; Kirkman et al., 2004) with the power of knowledge management. Team learning processes could produce a knowledge management system in the organization that, consequently, could serve as an important learning unit within the organization (Decuyper et al., 2010; West, Hirst, Richter & Shipton, 2004).

Team learning behaviors have been conceptualized as a process that is characterized by five basic behaviors: (1) exploring and co-construction of meaning, (2) collective reflection, (3) error management, (4) feedback behavior and (5) experimenting (Edmondson, 1999).

Exploring and co-construction of meaning consists in sharing knowledge, perspectives, and opinions, and constructively managing different opinions through communication between team members. *Collective reflection* is the ability to look at the past and the future, and to discuss the experiences, purposes, actions and, strategies. *Error management* relates to collectively discussing mistakes and trying to find a way to prevent them. *Feedback behaviors* are characterized by the search for feedback, both internal and external, in order to verify possible adaptations and/or improvements. The last dimension, *experimenting*, relates to the capability of the team to experiment new ways of achievement towards team objectives and comparing results to the previous ones (Edmondson, 1999; Savelsbergh, Van

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der Heijden & Poell, 2009). Otherwise, it can also become an outcome when it is defined as a result that may improve performance and efficiency (Edmondson, Dillon & Roloff, 2006).

Further investigations on team learning behaviors can improve our knowledge about team effectiveness (Órtega, et al., 2010; Wong, 2004). In the literature, team learning behaviors are seen as a result of communication and coordination that are built from shared knowledge between group members about tasks, resources, themselves and the context (Edmondson et al., 2006).

Thereby, to exist team learning behaviors the following criteria needs to be present: (1) interactions between group members in the share and knowledge process and (2) changes into group performance (Dimas et al., 2016). Previous studies have found a positive relationship between team learning behaviors and team performance (Edmondson, 1999; Van Woerkom & Croon, 2009). Through learning, team members are able to redefine new practices and discover new and better ways of achieving the team's goals what translates into greater levels of team performance.

Beyond team performance, previous studies found a positive effect of team learning behaviors on other criteria of team effectiveness, namely on team viability, quality of group experience and team process improvement (Aniceto, 2016; Edmondson & Nembhard, 2009).

Teams with a learning-oriented culture are more open to innovation (Rebelo, Stamovlasis, Lourenço, Dimas, Pinheiro, 2016), which can be considered as part of process improvement, and are able to take risks, discussing those risks and also improving their results based on the reflection process that is done collectively (Edmondson et al., 2006). The role of team learning behaviors in stimulating the innovation of teams have found support in previous studies (Amara, Landry, Becheikh & Quimet, 2008; Lemon Sahota, 2004; Walter & van der Vegt, 2013). Chan, Lim, and Keasberry (2003) showed in their study when team members adopt learning behaviors, they are personally linked to each other, sharing collective goals and developing team commitment, what might contribute to improve the quality of group experience. In line with this, Zellmer-Bruhm and Gibson (2006) found that team learning improves the level of satisfaction among the members of multinational teams.

In a study with student project teams, a positive relationship between team learning behaviors and team effectiveness was found, considering team viability and team performance as study measures (Van den Bossche et al., 2006). Drach- Zahavy and Somech

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(2001) consider that engaging in team learning behaviors can make the team identify better problems and challenges in the environment, developing higher quality ideas and introduce new and creative procedures, processes and products, which contributes to team viability.

Previous studies have also considered the role of team learning as a mediating process between inputs and outcomes. Edmondson (1999) have found support for the mediating role of team learning behaviors in the relationship between psychological safety and team performance. Moreover, Edmonson found also that the effects of group cohesion on the quality of group experience were predicted by team learning behaviors (Edmondson, 1999). Van der Vegt and Bunderson (2005) have considered team learning behaviors as a mediator between expertise diversity and team performance and results found support for this role. De Dreu (2007) also found that team learning mediates positively the effect of cooperative interdependence on team effectiveness.

Team Resilience and Team Learning Behaviors

Teamwork faces a lot of challenges, but when handled skillfully it helps to build individual and team resilience (Edmondson & Nembhard, 2009). This means that teams acquire the capacity to recover from adversity becoming more resourceful and having more strength (Sutcliffe & Vogus, 2003). Team resilience is conceptualized as a key-process to face the adversities and challenges related to the new demands of the work market (Pessoa, 2016). By overcoming challenges and conflicts, the literature suggested that teams can build capabilities for learning and collaboration (Edmondson & Nembhard, 2009).

Organizations have continuously investigated the most effective and efficient process for organizational learning (Edmondson, 2002; Edmondson & Nembhard, 2009). Promoting learning in team contexts seems to be a fundamental path to pursue and we argue that stimulating team resilience is a strategy to achieve higher levels of team learning. When teams have the ability to cope with challenges and to face adversities and setback, i.e., when they are resilient, they are more able to manage uncertainty and pressure and are, in consequence, more prepared to engage in learning behaviors (West et al., 2009).

In the literature, it was found that resilience is connected to learning (Sutcliffe & Vogus, 2003), emphasizing that adaptability to stress and challenges is very important. According to Carmeli, Friedman, and Tishler (2013), top management teams can develop resilience and learn from experiences, facilitating the adaptation process for futures challenges. Therefore, teams can become more resourceful and strengthened with the challenges (Alliger et al.,

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2015; Sutcliffe & Vogus, 2003).

According to our hypothesis, we hope to find positive relations between team resilience and team learning behaviors because both constructs have similarities between them. It is assumed that if a team is able to function normally after overcoming difficult situations, it is a resilient team. Thereby, the team will share knowledge, reflect together about the solutions of problems and delineate team goals. Resilient teams which share knowledge among its members will be able to innovate, achieve its goals and cooperate with each other (Alliger et al., 2015; Edmondson et al., 2006; Sutcliffe & Vogus, 2003).

Teams who have the ability to withstand and overcome stressors (Alliger et al., 2015) are able to share and combine information, knowledge, skills, and abilities (Sutcliffe & Vogus, 2003). Therefore, teams are able to adjust and adapt better, enhancing the group's abilities of handling complex and challenging situations (Sutcliffe & Vogus, 2003). We suppose that team resilience can be one of the facilitators of team learning behaviors. However, this line of research needs to be fully developed since our hypothesis has never been studied in the literature.

Team Resilience, Team Learning Behaviors and Team effectiveness

Previous studies suggest support for the relationship between resilience and learning behaviors (Alliger et al., 2015; Carmeli et al., 2013), between team resilience and learning behaviors (Sutcliffe & Vogus, 2003), between team learning behaviors and team effectiveness (Aniceto, 2016; Edmondson, 1999; Edmondson & Nembhard, 2009; van den Bossche et al., 2006; Van Woerkom & Croon, 2009; Zellmer-Bruhn & Gilson, 2006) and between team resilience and team effectiveness (Meneghel et al., 2014; Meneghel et al., 2016; Pessoa, 2016).

Team members are personally linked to each other since they share collective goals and develop a commitment to the team, improving the quality of group experience. Thereby, it can be found as an outcome of the relation between team resilience and learning behaviors (Chan et al., 2003). We expect a positive mediation of team learning behaviors in the relationship between team resilience and team effectiveness since team members are expected to know how to work together and get the group's work accomplished. They have to know how to use a diversity of options from face-to-face meetings to different time, place and technologies around the world (Sessa & London, 2012). Thereby, team members learn

The mediating role of team learning behaviors about each other's skills and expertise. They learn how to bring their best performance when it is needed, especially when unexpected situations emerge.

Thus, we seek to determine the mediating effect of team learning behaviors in the relationship between team resilience and the four outcomes of team effectiveness: team performance, team viability, quality of group experience and team process improvement. It is expected that team resilience will contribute to team effectiveness through team learning behaviors. In other words, we expect high resilient teams to be more open to develop new ideas, to learn and to observe others, i.e., to engage in learning behaviors, presenting, as result, higher levels of effectiveness. Resilient teams are more inclined to share knowledge and learn from it. Hence, teams will improve and be more effective and productive.

To sum up, Figure 1 represents the model analyzed in this study. Team resilience is conceptualized as an antecedent of team learning behaviors, the mediator of our model. We expect to find positive relationships between these two constructs. Therefore, we can say that team resilience is also an antecedent of team effectiveness.

Regarding the model under study, and based on the literature above presented, we propose the following research hypotheses:

H1. Team resilience has a positive relationship with team learning behaviors.

H2. Team learning behaviors mediate the relationship between team resilience and team effectiveness.

H2_a. Team learning behaviors mediate the relationship between team resilience and team performance;

H2_b. Team learning behaviors mediate the relationship between team resilience and team viability;

H2_c. Team learning behaviors mediate the relationship between team resilience and quality of group experience;

H2_d. Team learning behaviors mediate the relationship between team resilience and team process improvement.

Method

Procedure

This research is non-experimental, cross-sectional and adopts a group level analysis. The data was collected in three different periods: between November 2014 and January

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2015, between November 2015 and December 2015 and between January 2016 and April 2016. All the data came from convenience samples that were gathered in two distinct ways: (1) through online and (2) face to face application.

Firstly, the research team² used a personal contact to reach a representative of different organizations on both an oral and written basis. Then, an e-mail containing a presentation letter was sent to the organizations that revealed interest, explaining the type of collaboration and data collection that were intended.

After obtaining the organization approval, the research team sent the general instructions and conditions to a representative from each entity to ensure that the application of the questionnaire would follow the ethical procedures of psychological research (all participants provided their informed consent and confidentiality and anonymity was assured). When possible, a member of the research team was present to supervise the application of the questionnaire. When was not possible to implement this approach, an envelope was given to each participant to put the questionnaire once they were filled in. The envelopes with the questionnaires of each member of the team, appropriately sealed, were then placed together in a larger envelope.

According to Schein's (1980) and also Cohen and Bailey's (1997) definitions of a group, teams had to attend the following inclusion criteria: (1) teams must be composed at least by three 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 (Lourenço, Dimas & Rebelo, 2014; Bader, 2016).

The same instructions were given to all participants, varying only if they were leaders or members of the team. Team leaders were surveyed about team process improvement, team performance and team viability, while team members were surveyed about team resilience, team learning behaviors and quality of group experience.

Participants

The sample is constituted by 535 individuals from 90 teams, working in 40 Portuguese organizations from different sectors and areas of activity (e.g., industry, research, and services) with an average of seven elements per group (SD = 5.00; Min = 3; Max = 27). There were different types of organizations in the sample: large (16.70%), medium (42.20%), small (16.70%) and micro (14.40%).

² Research team was composed of Albuquerque (2016), Aniceto (2016), Bader (2016), Maia (2016), Martins (2016), Paolucci, (2016), Pessoa (2016) and van Beveren (2015).

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The team member' sample is composed of 445 team members between 18 and 67 years ($M = 35.49$; $SD = 10.03$). The sample was made of 226 females (50.80%). Their educational level varies from elementary to higher degrees. The majority of the sample had higher education background (38%) followed by employees with secondary education (36.20%). On average, the respondents have been working in the team for five years ($SD = 5.71$) and on the same organization for 9 years ($SD = 8.46$). Their daily interaction was, on average, about five hours a day ($SD = 2.82$).

Regarding the team leaders' sample, it was made up of 90 leaders with an average of 18 to 67 years ($M = 39.38$; $SD = 9.91$). The sample consist of 28 females (31.10%) and 55 males (61.10%) with 7.80% of unanswered. Their educational level varied from elementary to higher degrees. The majority of leaders had completed secondary education (44.40%) followed by leaders with a higher education background (41.10%). The leaders, on average, had 8 years working on the current team ($SD = 6.96$) and 14 years within the organization ($SD = 7.77$).

Measures

Team resilience. The scale applied was the Portuguese version of the Team Resilience scale (Albuquerque, 2016) originally developed by Stephens et al., (2013). The scale has 3 items (e.g., "This team knows how to cope with challenges") and is measured by a Likert-type scale in which the lowest value is (1) "almost not applicable" and the highest value is (5) "almost completely applicable" (Albuquerque, 2016). The psychometric properties of the scale were assessed with a sample of 456 individuals from 70 teams from different sectors of activity, coming from the center and north of Portugal. The solution that emerged from the factorial analysis pointed to the retention of one factor. The alpha of Cronbach was .93 (Albuquerque, 2016).

Team learning behaviors. The instrument applied is the Portuguese version of "Team Learning Behaviors' Instrument", created by Savelsbergh et al. (2009). The scale is composed of 25 items, aggregated in five dimensions: exploring and co-construction of meaning (e.g., "Team members collectively draw conclusions from the ideas that are discussed in the team."), collective reflection (e.g., "We regularly take time to reflect on how we can improve our working methods") error management (e.g., "Team members

The mediating role of team learning behaviors communicate their mistakes, to prevent that others make the same mistake”), feedback behavior (e.g., “ We seek feedback on our methods”), and experimenting (e.g., “Our team tests new working methods”) (Edmondson, 1999). Items were answered through a Likert-type scale in which the lowest value (1) corresponds to “almost not applicable” and the highest value (5) corresponds to “almost completely applicable”. The Cronbach’s α for the dimensions were between $\alpha = .73$ and $\alpha = .95$, which reveal a good internal consistency (Dimas et al., 2016). Aniceto’s work (2016) supported, through confirmatory factor analysis, the pentadimensional structure of the scale. However, due to the high correlations identified between the five dimensions (with magnitudes from .63 to .84), another confirmatory factor analysis was performed with team learning as a second order factor. The adjustment indexes have supported this model, therefore, for testing our hypothesis, we will consider the overall score of all five team learning behaviors as a variable.

Team effectiveness

To measure team viability, team performance, team process improvement and quality of group experience we used scales developed and validated by Aubé and Rousseau (2005) and Rousseau and Aubé (2010), all adapted to the Portuguese language by Albuquerque, (2016).

Team Performance Scale, which was developed by Aubé and Rousseau (2005), is composed of three items (e.g., “achievement of performance goals”), measured on a Likert-type scale in which the lowest value (1) corresponds to “very low” and the highest value (5) corresponds to “very high”. The psychometric properties for the Portuguese version of the scale were tested with a sample of 76 leaders. The solution that emerged from the factorial analysis pointed to the retention of one factor and presented an internal consistency of .81 (Albuquerque, 2016).

Team Viability Scale, which was developed by Aubé and Rousseau (2005), is composed of four items (e.g., “team members adapt themselves to changes in the workplace”), measured on a Likert-type scale in which the lowest value (1) corresponds to “almost not applicable” and the highest value (5) corresponds to “almost completely applicable”. The

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psychometric properties for the Portuguese version of the scale were tested with a sample of 76 leaders which pointed to the retention of only one factor with a Cronbach's alpha of .74 (Albuquerque, 2016).

Quality of Group Experience scale, was developed by Aubé and Rousseau (2005). This scale is composed of three items (e.g., "within our team, the work climate is good"), that are measured on a Likert-type scale in which the lowest value (1) corresponds to "I strongly disagree" and the highest value (5) corresponds to "I strongly agree". The psychometric properties for the Portuguese version of the scale were tested through exploratory factor analysis with a sample of 456 subjects from 70 working groups representing 26 organizations of the regions Centre and North-Centre of Portugal. The factorial solution retained only one factor and the Cronbach's alpha obtained was .95 (Albuquerque, 2016).

Team Process Improvement Scale, which was developed by Rousseau and Aubé (2010), is composed of five items (e.g., "Team members have successfully implemented new ways of working to facilitate achievement of performance goals,"), measured on a Likert-type scale in which the lowest value (1) corresponds to "almost not applicable" and the highest value (5) corresponds to "almost completely applicable". The psychometric properties for the Portuguese version of the scale were tested with a sample of 76 leaders. The solution that emerged from the factorial analysis pointed to the retention of one factor. The obtained Cronbach's alpha was .89 (Albuquerque, 2016).

Control Variable

Considering the various studies published in the literature, team size was considered as a control variable since it has already been demonstrated that team processes and conditions are affected by the number of members that the team has (e.g., Barrick, Stewart, Neubert & Mount, 1998; Mohammed & Angell, 2004). To obtain team size, the research team asked the leaders to report the number of team members in the questionnaire.

Statistical procedures

Several statistical analyses were performed using SPSS. In order to test hypothesis H1, a hierarchical regression analysis was conducted taking into account the control variable. A

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two-step process was used. The control variable was included in the first step and independent variable was included in the second step (Bader, 2016).

Hypothesis 2 was tested using PROCESS, which is a program for SPSS developed by Hayes (2012). It allows the use of 10.000 bootstrap estimates for the construction of a 95% bias-corrected confidence interval for the indirect effect. In simple mediation, the indirect effect is calculated as the product of coefficients from the independent variable to the mediator and from the mediator to the dependent variable. The indirect effect is statistically significant when zero is not included between the lower and upper bound of the 95% bias-corrected bootstrap confidence interval generated.

Bootstrapping is preferable to Baron and Kenny's (1986) causal step approach for several reasons (Hayes, 2012). First, the causal step approach deduces mediation based on the significance of the product of coefficients relating X to M and M to Y individually, but it does not quantify the indirect effect or apply any inferential test to the product of coefficients. This means that the product of coefficients may be significant, even though the coefficients relating X to M and M to Y are not, and vice versa. Second, the causal step approach has lower statistical power and inflated type I error rates (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Finally, bootstrapping did not assume that a direct relation (X and Y association) must be established for the mediation effect to appear (Hayes, 2012; Peñarroja, Orengo & Zornoza, 2017).

Results

Data aggregation and correlation analysis

The first step of data analysis was the study of missing values and of their distribution pattern. Following Graham and Hofer (2000), cases of a scale with more than 5% of non-answers should be eliminated. From our sample, no cases were discarded since the largest percentage found in team members' database was 1.10% (5 missing values) and team leaders did not show any missing. Little's Mcar test was used to analyze the distribution pattern of non-answers. When the correspondent distribution is random, the missing values replacement is made using the average of the respective item. When the distribution is not random (p -value < .05) the EM algorithm (expectation maximization) should be used. In the team members' database, missing values for team resilience [$\chi^2(0) = .000, p < .001$], team learning behaviors [$\chi^2(532) = 619.43, p = .01$] and quality of group experience [$\chi^2(0) = .000, p <$

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.001] had non-random distributions, so the replacement was made by the EM method.

To provide justification for the aggregation of the data to the team level (Team resilience, team learning behaviors and quality of group experience provided by peers), the average deviation index (AD Index) developed by Burke, Finkelstein, and Dusig (1999) was performed. Following the authors' recommendations, we used the criterion $ADM \leq 0.83$ to aggregate, with confidence individual responses to the team level. The average ADM values obtained for team resilience ($M = 0.41$, $SD = 0.22$), team learning behaviors ($M = 0.51$, $SD = 0.20$) and quality of group experience ($M = 0.40$, $SD = 0.27$) were below the upper limit of 0.83 revealing that the level of within-team agreements was sufficient to aggregate team members' score to the team level.

Furthermore, to check whether aggregation was justified, we also computed the intra-class coefficient correlation ICC (1) and ICC (2) (Bliese, 2000). The ICC (1) values for team resilience, team learning behaviors and quality of group experience were .19, .24 and .22, respectively. The ICC (2) values for the same variables were .54, .61 and .58, respectively. Values above .50 for ICC 2 and up to .20 for ICC 1 are considered acceptable (Klein & Kozlowski, 2000). Overall, the values are near the values considered acceptable (Bliese, 2000; Klein & Kozlowski, 2000) and provided support to the aggregation of the data to the team level.

Lastly, a one-way analysis of variance (ANOVA) was conducted to verify whether there was statistical significance between-team discrimination in team resilience, team learning behaviors and quality of group experience. The observed F value for team resilience was: $F(89, 352) = 2.167$, $p < .01$. The observed F value for team learning behaviors was: $F(89, 355) = 2.590$, $p < .01$. The observed F value for quality of group experience was: $F(89, 354) = 2.468$, $p < .01$. These results are acceptable between-team discrimination of team resilience, team learning behaviors and quality of group experience, and supported the validity of the aggregated measures (Chan, 1998; Valls, González-Romá & Tomás, 2016).

Table 1 reports means, standards deviations, correlations and the alphas de Cronbach of the variables under study. Team size (control variable) was included in the analysis and it was significantly related to team resilience, team learning behaviors and quality of group experience. Significant correlations were found between team resilience and team learning behaviors ($r = .69$, $p = .01$), as well as between team resilience and quality of group experience ($r = .67$, $p = .01$), team performance ($r = .47$, $p = .01$), team process improvement ($r = .41$, $p = .01$), and team viability ($r = .46$, $p = .01$). As for team learning behaviors, its

The mediating role of team learning behaviors relationship with quality of group experience ($r = .67, p = .01$), team performance ($r = .49, p = .01$), team process improvement ($r = .46, p = .01$) and team viability ($r = .45, p = .01$) were all significant.

Table 1. *Descriptive statistics, scale reliabilities and correlations between variables.*

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Team Resilience	3.98	.50	(.92)						
2. Team Learning Behaviors	3.54	.52	.69**	(.97)					
3. Quality of Group Experience	4.06	.56	.67**	.67**	(.93)				
4. Team Performance	4.05	.58	.47**	.49**	.37**	(.83)			
5. Team Process Improvement	3.88	.63	.41**	.46**	.39***	.66***	(.85)		
6. Team Viability	4.05	.57	.37**	.45**	.35**	.61***	.56**	(.75)	
7. Team Size	6.46	5.00	-.23*	-.33**	-.32**	-.05	-.13	-.08	-

Note: * $p < .05$ ** $p < .01$ *** $p < .001$

Hypothesis analysis

Team size was controlled in the testing of the hypotheses that considered team learning behaviors and the quality of the group experience as the criterion variable since it was significantly correlated with these variables. In order to test hypothesis H1, a hierarchical regression analysis was conducted. A two-step process was adopted where the control variable was included in the first step and team resilience was included in the second step. Results revealed a positive and significant relationship between team resilience and team learning behaviors ($\beta = .65, p < .001$) (cf. Table 2). Therefore, H1 was empirically supported.

Table 2.

Results from hierarchical regression analysis with team resilience and team learning behaviors

Team Learning Behaviors						
Construct	B	EBP	β	R^2	ΔR^2	
				.51**	.10	
Step 1 Team Size	-.03	.01	-.33**			
				.51***	.50	
Step 2 Team Size	-.02	.01	-.18*			
Team Resilience	.68	.08	.65***			

Note: * $p < .05$ ** $p < .01$ *** $p < .001$; N= 90 teams

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To test hypothesis 2 process was used and the indirect effect of team resilience on team effectiveness through team learning behaviors was analyzed. Bootstrap analysis showed the indirect effect of team resilience on team performance through team learning behaviors was significant (estimate of *ab* product = .25; boot *SE* = .11; 95% confidence interval = .06 to .50) (cf. Table 3), as well as on team viability (estimate of *ab* product = .30; boot *SE* = .11; 95% confidence interval = .10 to .56) (cf. Table 4), quality of group experience (estimate of *ab* product = .26; boot *SE* = .13; 95% confidence interval = .02 to .52) (cf. Table 5), and team process improvement (estimate of *ab* product = .29; boot *SE* = .16; 95% confidence interval = .01 to .65) (cf. Table 6). Accordingly, hypothesis 2 was supported since the zero value did not appear within the confidence interval.

Table 3.

Results of Process analysis with team resilience on team performance with team learning behaviors as mediator

DV / Predictor	B	SE	LL IC 95%	UL IC 95%	R ²
TLB					.47***
<i>Team resilience.</i>	.72***	.08	.56	.88	
Performance					.27***
<i>TLB.</i>	.35*	.14	.06	.62	
<i>Team Resilience</i>	.30*	.15	.01	.59	
Indirect Effect	.25	.11	.06	.50	

Nota: N= 90 teams; TLB= Team learning Behaviors; DV = Dependent variable; B = Regression coefficient non standardized; SE = Standard Error; LI = Lower limit; UL =Upper limit; IC = Confidence interval.

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

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Table 4.

Results of Process analysis with team resilience on team viability with team learning behaviors as mediator

DV / Predictor	B	SE	LL IC 95%	UL IC 95%	R ²
TLB					.47***
<i>Team resilience.</i>	.72***	.08	.56	.88	
Viability					.21***
<i>TLB.</i>	.41**	.14	.12	.41	
<i>Team Resilience</i>	.12	.15	-.18	.42	
Indirect Effect	.30	.11	.10	.56	

Nota: N= 90 teams; TLB= Team learning Behaviors; DV = Dependent variable; B = Regression coefficient non standardized; SE = Standard Error; LI = Lower limit; UL =Upper limit; IC = Confidence interval.

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

Table 5.

Results of Process analysis with team resilience on quality of group experience with team learning behaviors as mediator

DV / Predictor	B	SE	LL IC 95%	UL IC 95%	R ²
TLB					.50***
<i>Team resilience.</i>	.68***	.08	.51	.83	
Quality of group Experience					.54***
<i>Team size</i>	-.01	.00	-.02	.00	
<i>TLB.</i>	.38**	.11	.16	.60	
<i>Team Resilience</i>	.44**	.11	.22	.67	
Indirect Effect	.26	.13	.02	.52	

Nota: N= 90 teams; TLB= Team learning Behaviors; DV = Dependent variable; B = Regression coefficient non standardized; SE = Standard Error; LI = Lower limit; UL =Upper limit; IC = Confidence interval.

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

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Table 6.

Results of Process analysis with team resilience on team process improvement with team learning behaviors as mediator

DV / Predictor	B	SE	LL IC 95%	UL IC 95%	R ²
TLB					.47***
<i>Team resilience.</i>	.72***	.08	.56	.88	
Team Process Improvement					.22***
<i>TLB.</i>	.40*	.15	.09	.71	
<i>Team Resilience</i>	.22	.16	-.10	.55	
Indirect Effect	.29	.16	.01	.65	

Nota: N= 90 teams; TLB= Team learning Behaviors; DV = Dependent variable; B = Regression coefficient non standardized; SE = Standard Error; LI = Lower limit; UL =Upper limit; IC = Confidence interval.

* $p > .05$; ** $p < .01$; *** $p < .001$.

Since team resilience presents a direct effect on team performance (estimate effect = .30; boot $SE = .15$; 95% confidence interval = .01 to .59) (cf. Table 3), as well as quality of group experience (estimate effect = .44; boot $SE = .11$; 95% confidence interval = .22 to .67) (cf. Table 5), the mediation of team learning behaviors in these cases is partial. However, team resilience did not reveal a direct effect on team viability (estimate effect = .12; boot $SE = .15$; 95% confidence interval = -.18 to .42) (cf. Table 4), as well as on team process improvement (estimate effect = .22; boot $SE = .16$; 95% confidence interval = -.10 to .55) (cf. Table 6), since zero appears within the confidence interval. Therefore, team learning behaviors presented a total mediation in the relationship between team resilience and team viability and team process improvement.

Discussion

Resilience is essential to prepare teams for future challenges making them work properly when facing adversities (Meneghel et al., 2014). Team resilience helps increasing organizational knowledge, enhancing the capacity of the team surpass challenges and to continue working normally after them. Team learning behaviors play an important role in the learning process of organizations since teams are considered as learning units. Organizations

The mediating role of team learning behaviors can create knowledge management systems that would become one of the most important inputs for them (Decuyper et al., 2010), and thereby become more effective.

In the literature, team resilience and team effectiveness have shown a positive relationship between each other (Meneghel et al., 2016; Meneghel et al., 2016; Pessoa, 2016). Team learning behaviors and team effectiveness have already revealed a positive relation in others studies (Aniceto, 2016; Edmondson, 1999; Edmondson & Nembhard, 2009; van den Bossche et al., 2006; Van Woerkom & Croon, 2009; Zellmer-Bruhn & Gilson, 2006). Both variables can be considered antecedents of team effectiveness since they improve the effectiveness of teamwork. Besides that, the literature showed that team resilience has a positive relation with team learning behaviors (Alliger et al., 2015; Sutcliffe and Vogus, 2003).

The main objective of this research was to study the mediation effect of team learning behaviors in the relationship between team resilience on overall team effectiveness and to verify the effect of team resilience on team learning behaviors. Hypothesis 1 was supported since our model revealed a positive relationship between team resilience and team learning behaviors. A resilient team has the capacity to surpass challenges and setbacks since the team is able to build knowledge repertoire and develop new abilities (Edmondson & Nembhard, 2009). Therefore, resilient teams are more open to adopt learning behaviors.

Sutcliffe and Vogus (2013) have already mentioned a link between team resilience and learning behaviors emphasizing that adaptability to stress and challenges. Carmeli et al., (2013) study revealed that top management teams able to develop resilience and learn from experiences, and adapt better to futures challenges. Thus, resilient teams are able to resolve challenges effectively if they learned how to maintain resources and improve skills. Teams become more resourceful and flexible (Alliger et al., 2015).

Hypothesis 2a showed a partial mediation from team learning behaviors in the relationship between team resilience and team performance, meaning that there are others variables that also partially affect this relationship, but they were not studied in the present study. From the literature review, it was already expected this relation since a resilient team is able to surpass difficult situations and it is also able to learn from them and so achieve their goals (Luthans et al., 2007a; Luthans et al., 2007b; Pessoa, 2016; Salanova et al., 2012).

The hypotheses 2b regarding team learning behaviors mediating the relationship between team resilience and team viability was supported. A total mediation was found, where team learning behaviors fully explain the relationship between team resilience and team viability. Pessoa (2016) pointed that team resilience does not affect significantly team viability since

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team ability to keep working together may be related to team stability and not to team capacity of keeping functioning normally after exposed to stressors. Indeed, team resilience and team learning behaviors explain fully team viability since team resilience and team learning behaviors provided team capabilities to adapt internally and/or externally to changes in the organizations. Supporting our findings, Aniceto (2016) revealed that team learning behaviors have a positive effect on team viability and Decuyper et al. (2010) showed us that team learning behaviors are essential for the effective adaptation to the organization external environment.

Hypothesis 2c revealed a partial mediation between team resilience and quality of group experience when team learning behaviors mediate the relationship, meaning that there are others variables that help to partially explain the relationship between team resilience and quality of group experience. Pessoa (2016) point out that team resilience has a positive effect on quality of group experience and Aniceto (2016) revealed that team learning behaviors have a positive relationship with quality of group experience. According to our result, we can say that a resilient team learns when it outruns a challenge. Thus, resilient teams can share more knowledge and ideas about work and how to realize their tasks, making them able to create similar opinions about the work environment and the quality of relations in the workplace increase.

At last, hypothesis 2d revealed a total mediation when team learning behaviors were intervening as a mediator in the relationship between team resilience and team process improvement, team learning behaviors fully explain the relationship between team resilience and team effectiveness. This relation highlighted the bond that team learning behaviors have with innovation (Crossan, Lane & White, 1999; Decuyper et al., 2010; Pessoa, 2016) since team process improvement is interconnected with innovation. Team learning behaviors are characterized itself as a process of reflection and action described by asking questions, seeking feedback, experimenting, reflecting on results and discussing possible mistakes, contributing to the emergence of new ideas (Edmondson, 1999). Accordingly, team process improvement can be conceptualized as a measure of team learning behaviors; thus, team process improvement can be a team learning behaviors outcome (Edmondson et al., 2006). Therefore, team learning behaviors have shown already a positive effect on team process improvement (Aniceto, 2016).

Organizations need to renew themselves and grow to survive in periods of crisis becoming resilient organizations (Pessoa, 2016; Salanova et al., 2012) with resilient teams inside. Thus,

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teams who grow in face of adversity and adapt to stress are able to increase their results and performance, their team viability and their positive attitudes about their environment. Teams also generate positive ideas about their social relations in the workplace and bring innovative solutions and products (Kaplan, LaPort, & Waller, 2013; Pessoa, 2016; West et al., 2009).

Finally, it is essential to mention that team resilience, team learning behaviors and team effectiveness grant a competitive advantage to organizations since the development of teams are one of the elements that can guide team effectiveness. Hence, organizations should emphasize on team resilience and team learning behaviors creating and/or improving their training programs as it would help building a collective understanding of situations (Alliger et al., 2015).

Some training programs could consist in putting the team under pressure in control environment, in order to make them learn adaptive behaviors. Thus, the team would be able to work properly and revealing good results under the normal pressure condition exposed in the company. Other training programs could consist in team sharing of experience and knowledge for the achievement of teamwork and high level of team effectiveness.

Theoretical and practical implications

This study found empirical evidence to support the idea that team learning behaviors can have a mediating role between team resilience and team effectiveness. The study contributes to increasing the scientific knowledge on team resilience, team learning behaviors, and team effectiveness. Particularly in the case of team resilience and team learning behaviors, we provided evidence that there is a positive relationship between variables.

This paper tried to give a more coherent explanation of the role of team learning behaviors and team resilience. Our results clearly highlight the importance of studying team resilience on team learning behaviors to improve organizational effectiveness. How to turn a team resilient should be one of the main focus of investigations in the future.

In the present study, following previous authors (Aniceto, 2016 Bader, 2016; Pessoa, 2016), effectiveness was measured through four different criteria: team performance, team viability, quality of group experience and team process improvement. Further studies, could explore empirically, through structural equation modeling, the presence of a second order variable – effectiveness – that is supported by the four criteria considered. A multidimensional approach to team effectiveness enables us to establish different relations between each criterion of effectiveness and team resilience when team learning behaviors are

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The present study reveals the importance of promoting team resilience, team learning behaviors, and team effectiveness because the concepts contribute to companies achieve their goals of productivity, success and organizational growth. Therefore, we hope to establish new companies' policies that allow their employees to share and build new knowledge between them and so become more effective and create capabilities to resist and surpass difficulties.

Limitations and future research direction

This research has limitations to be taken into account. Considering the constrains of testing causal relationships through a cross-sectional design, further research should study such relations but applying a different study design such as a longitudinal study to gain additional support on the nature of the relationships under study. Additionally, the sample in this study is a convenience sample of teams coming only from Portuguese organizations. This inhibits any type of generalization of the findings in the study to others populations and other cultures. For future research, it would be good to work with a wider geographic background in the population so the results could be generalized or compare our study only with similar samples from different countries.

Data was gathered using questionnaires because it is a cheap, non-intrusive and easy way to collect data. However, they have limitations like social desirability bias that implies a distortion in the accuracy of responses, since participants may feel more inclined to answer questions following what they think is expected from them. Furthermore, the questionnaire only uses close-ended questions, so researchers are losing the opportunity of gathering more rich and profound information that it is possible to have with open-ended questions (Weiten & McCann, 2010). Although, questionnaires were collected via two sources (i.e. team members and team leaders) it was not possible to avoid the effects of the common method variance (Conway & Lance, 2010; Podsakoff, MacKenzie, & Podsakoff, 2012; Spector, 2006) because team resilience, team learning behaviors and quality of group experience have their information provided by team members which means that predictor, mediator and one of the team effectiveness criteria have the same source. To diminish the impact of common method variance, the Common Latent factor test could have been performed. In futures research, it would be advised to use the test to avoid bias of information.

Future research should use different measures to overcome the limitations of the team performance scale such as measuring it through objective results. Moreover, it would be

The mediating role of team learning behaviors interesting to study team resilience and team effectiveness mediated by team learning behaviors at different stages of the team development. The literature has shown us that teams go through different stages (Tuckman, 1965) since its formation until its end (Dimas, Lourenço & Miguez, 2005). Team learning behaviors might change according to the development stage of the team and that would influence team effectiveness and team resilience effects. It would be also very motivating to see how team resilience would behave as a moderator in the relationship between team learning behaviors on team effectiveness. In other words, discover how it would affect the relationship between team learning behaviors and team effectiveness.

Conclusion

This research aimed to study the relation of team resilience on team effectiveness considering the mediating role of team learning behaviors and the relation of team resilience on team learning behaviors. We found support for the mediating role of team learning behaviors in the relationship between team resilience and team effectiveness. In conclusion, we found that team resilience and team learning behaviors can be considered antecedents of team effectiveness: both can improve the effectiveness of teamwork. Moreover, we verified that team resilience had a positive relationship with team learning behaviors.

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