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Master's thesis

The impact of team psychological capital on team viability: the mediating role of affective team commitment

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Abstract

Team Psychological Capital (team PsyCap) is an emergent state that involves team-efficacy, optimism, hope and resilience, which has shown influence on the results achieved by workgroups. Meanwhile, Affective Team Commitment appears to be very beneficial to teams, impacting their effectiveness. However, one dimension of effectiveness, Team Viability is still understudied. Thus, the aim of this study was to analyze the relationship between team PsyCap and team viability, considering the mediating role of affective team commitment. In that sense, team PsyCap could create positive conditions, in which affective team commitment could be enhanced, and, by its turn, this emotional connection could impact team viability, that can be understood as the ability of group members to work together on future tasks. The sample was composed of 124 teams, including 124 team leaders and 554 team members, working in different sectors from 83 organizations. Teams' leaders were surveyed about team viability, while the teams' members were surveyed about the team's psychological capital and the team's affective commitment. Results showed that affective team commitment fully mediates the relationship between team psychological capital and team viability. The present thesis brings knowledge to the group-level of PsyCap and to team viability, both still in need to have more studies. Finally, there is practical relevance, since it can help leaders to understand how important team PsyCap and affective commitment are for their teams' results, so they can make scientific-based interventions.

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Introduction

Organizations worldwide were pushed to restructure the work to enable better responses for the complex market, shifting from individual work to work teams (Kozlowski & Ilgen, 2006). To this extent, groups have a crucial role in organizations, once lately much of the work is accomplished in teams, shown by a constant increase each year on work teams' research, since the late 1990s (Mathieu et al., 2017). Teams can be defined as a set of three or more individuals that maintain a certain level of interdependence in terms of accomplishment of goals and tasks set by the organization (Kozlowski & Bell, 2003; Sundstrom et al., 1990). Although some teams are very successful, others are confronted with a series of failures (Aubé & Rousseau, 2005), which highlights the importance of understanding which are the variables that can influence its success.

Therefore, knowing how individuals' psychological capabilities can interfere on one's performance, some studies started focusing on the psychological capabilities of the team, namely the team Psychological Capital (Dawkins et al., 2013). The Psychological Capital, hereby PsyCap, was firstly conceptualized at the individual level, defined as a positive psychological state of development characterized by resources of self-efficacy, hope, optimism and resilience (Luthans et al., 2007). However, it recently has been described also at the team level as a product of interactive exchanges between members that can create an emergent sense of the group's ability to achieve collective goals (Walumbwa et al., 2011). Thus, it is essential to understand how the team psychological capital can influence the teams' outcomes, such as effectiveness, especially through mediating processes (Newman et al., 2014).

Although team performance has been the team effectiveness criterion that more attention has received from both research and practice (Aubé & Rousseau, 2005), team effectiveness includes other relevant dimensions (Hackman, 1987). Indeed, effectiveness also includes team viability, which can be defined as the team's capacity to grow and adapt so team members can continue to work together in the future (Bell & Marentette, 2011; Hackman, 1987). However, team viability remains an understudied concept (Mathieu et al., 2008). Nevertheless, according to Heled et al. (2016), it seems that teams characterized by high PsyCap tend to better cope in daily life and develop the team's strengths, which could increase the team members' willingness to contribute beyond the team's success. From a theoretical point of view, this finding could point to a positive relationship between team PsyCap and team

viability. Indeed, contributing beyond the team's success could strengthen the team's capacity to adapt and to work in future tasks.

Individuals' psychological capital can also be argued to be related to commitment to the organization, since the organization fulfills needs for efficacy and accomplishment for those high in PsyCap (Avey et al., 2011). The type of commitment employees show towards the organization can impact the way they work and behave. For that matter, research started focusing on how commitment can also affect teams. As indicated by Meyer and Herscovitch (2001), the type of commitment most beneficial to teams is affective commitment, since it exhibits a positive relation to team performance and viability. This kind of commitment supposes an emotional attachment of team members to the team, which can be important for the team to continue working together in the future. In that sense, team psychological capital may enhance affective team commitment, since these psychological capacities may create a positive environment for the team to develop an emotional attachment and identification with the team. By its turn, affective team commitment may influence the team's effort to continue to work together as a team in the future.

However, there is still a lot of gaps regarding psychological capital at a team level. Meanwhile, there is also a need to examine what influences affective team commitment and team viability. Thus, considering these aspects, the present research aims to study the impact of team psychological capital on teams' viability, while mediated by affective team commitment. This study brings important contributions. First, it contributes to enlarge the academic knowledge on team PsyCap and team viability, both still understudied. Second, it highlights the importance of being affective committed to the team, as a crucial contribution to achieve success. Last, it helps scientist-practitioners to understand what variables are important to consider for group interventions, providing science-based solutions. The model under analysis is represented in Figure 1.

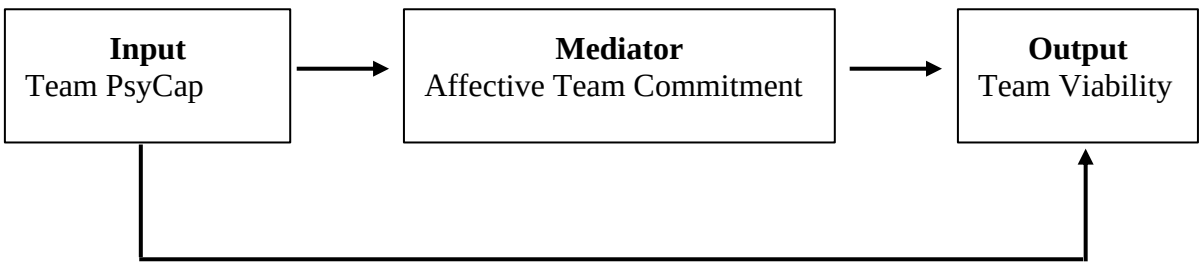

Figure 1. Proposed hypothesized model.

State of Art

Team Psychological Capital

Among the strategic resources that may contribute to sustainable competitive advantage, one in particular has gained increasing attention in the literature for its influence on human performance: the psychological capital. Developed by Luthans and Youssef (2004), the psychological capital refers to the individual's psychological capacities that can be measured and developed. Those capacities are considered a state-like, which means they can be trained, practiced and changed over time, as opposed to trait-like capacities (Luthans, 2012). Based on already existing positive psychological constructs, Luthans and his colleagues described the PsyCap as a positive psychological state that includes self-efficacy, hope, optimism and resilience.

Although PsyCap was developed as an individual construct, it has been discussed the appropriateness of elevating the construct to a team-level (Newman et al., 2014). Accordingly, Walumbwa et al. (2011) developed a measure of team PsyCap, referring to it as an emergent sense of the group's ability to achieve collective goals, as the product of interactive exchanges between members. However, few studies focus on developing the team PsyCap, in a way that underlines its outcomes and mediators, which makes research needed at this point (Newman et al., 2014).

Therefore, the four dimensions of PsyCap can also describe psychological capacities of the team. Hence, self-efficacy, based on Bandura's social cognitive theory, refers to the individual's positive belief in their ability to perform tasks, mobilizing their motivation, cognitive resources and courses of action towards it (Bandura, 1997). That way, individuals with high self-efficacy generally perceive they have the ability to control outcomes and succeed in addressing difficult challenges (Stajkovic & Luthans, 1998). In a team, self-efficacy will be here referred to as team-efficacy, can be seen as a shared belief on the team's capacity to perform tasks, which will impact on their motivation (West et al., 2009).

Hope is composed of two components: agency and pathways. Agency refers to an individual's motivation to attain a specific task or goal, while pathways concerns the way by which that task may be accomplished (Snyder et al., 1996). Those high in hope, as an individual or as a shared hope by the team, derive the agentic motivation and are more likely to develop alternative pathways to accomplish their goals (Luthans, 2012). In a team context, hope can

represent a higher degree of goal-oriented behaviors, once the group members would be more willing to communicate ideas and perspectives with others to improve their situation (Wu & Chen, 2018).

Optimism refers to an individual's positive expectancies of outcomes, resulted by the tendency to internalize positive events and externalize negative events (Scheier et al., 2001). Individuals with high optimism generally build positive expectancies that motivate them to pursue their goals and deal with difficult situations (Seligman, 1998). A team with optimistic beliefs is more engaged to the tasks and experiences less conflicts (West et al., 2009). It is also expected that optimistic teams would internalize their success and believe they have control over team outcomes (West et al., 2009).

Finally, resilience refers to the ability of an individual to recover from setbacks, such as adversity, uncertainty, risk or failure, and adapt to changes and stress demands (Masten & Reed, 2002). Individuals high in resilience tend to better adapt in the face of negative experiences and changes in the external environment (Luthans, 2012). Resilient teams will overcome challenges and stress, in a way that they can quickly recover from failures, maintaining its performance (West et al., 2009). In that sense, those teams are less likely to experience the potentially damaging effects of threatening situations (West et al., 2009), which could be an important aspect towards achieving team viability.

It is important to notice that, although the four dimensions were hereby described separately with the purpose to facilitate the understanding of the concept, the PsyCap is a second-order concept. That means that the PsyCap is a whole concept that englobes each of the four dimensions mentioned, and each of them is important for its construction, but that they will not be analyzed separately. In other words, if each of the dimensions were to be analyzed separately, it would lose the sense of the PsyCap that is, indeed, a combination of the four dimensions together.

The psychological capital has shown positive relationships with desirable outcomes at the individual level, such as performance and satisfaction (Luthans et al., 2007), psychological well-being (Avey et al., 2010) and organizational commitment (Luthans et al., 2008). Meanwhile, as reported in the meta-analysis by Avey et al. (2011), PsyCap has also shown negative relationships with undesirable outcomes, namely turnover intentions and cynicism. A lot of studies can be found on the impact of individual PsyCap. However, as highlighted by

Shen and Tian (2020), there is still no in-depth research on team PsyCap, which can be seen when researching team PsyCap in scientific magazines.

Although those outcomes have not been explored at a team level as much as at the individual level, Walumbwa et al. (2011) also found that team PsyCap was positively related to team performance. Similarly, Rebelo et al. (2018) found that team PsyCap mediates the relationship between transformational leadership and team performance. The relationship between team PsyCap and team performance was also supported by Waters et al. (2020), and these empirical evidence makes it also important to check if this impact can be seen in team viability. Few studies also highlight that PsyCap has impact on positive outcomes, such as team innovation (Tho & Duc, 2020; Waters et al., 2020), team organizational citizenship behavior (Waters et al., 2020), and individuals' job satisfaction (Heled et al., 2016).

Proposed by Newman et al. (2014), the agenda for future research on PsyCap highlights the importance to study the construct at different levels (individual, team and organizational), to underline the mechanisms by which PsyCap can influence outcomes at those levels, and to identify factors that can moderate or mediate the relationships between PsyCap and outcomes. Thus, considering the need to study the construct at different levels, this study focuses on the team level. Attending to the importance of understanding the different mechanisms that can mediate the relationship between PsyCap and team outcomes, it will be investigated how affective team commitment mediates the relationship with team viability.

Team Psychological Capital and Affective Team Commitment

Although research into commitment has been widely conducted at the organizational level, research also started to be conducted at the team level, according to Hammond (2008). While there are many definitions of organizational commitment, the one presented by Meyer and Allen (1991) has received greater attention. The authors define organizational commitment as a psychological state that describes the employees' relationship with the organization, which impacts the decision of continuing the membership. According to these authors, there are three types of commitment: (a) normative commitment, which is related to feeling obligated to stay in the organization as part of recognizing the investment made by it and a way of paying it back; (b) continuance commitment, which reflects the perception of costs associated with leaving the organization; and (c) affective commitment, that refers to an attachment and an identification with the organization, along with the wish to stay.

Regarding this definition, it is important to clarify that commitment, although it happens in an organizational context, doesn't necessarily happens towards the organization itself (Meyer & Herscovitch, 2001). Therefore, members can also show commitment towards their team. Indeed, research has shown that employees are more committed to their team than to the organization (Riketta & Van Dick, 2005). The present research is centered on affective team commitment. Another important aspect to clarify is that, in the literature, team commitment is usually conceptualized as the affective form of commitment. For example, Bishop and Scott (2000) defines team commitment as the strength of team members' involvement and identification with their team, while Neininger et al. (2010) defines as an identification with goals and values, alongside with the wish to remain in the group to contribute to these goals. Such definitions denote an emotional relationship and identification that the individual develops towards his or her team, which is very similar to the definition of affective commitment, that just don't use the word *affective*, as the definition by Meyer and Allen does.

In that sense, it is important to understand what are the antecedents of affective team commitment. For instance, Hammond (2008) found that autonomy, teamwork, perceived team support and team potency were positively related to affective team commitment. Similarly, teamwork collaboration and managerial strategies were also found as important to develop affective team commitment (Galletta et al., 2016). Furthermore, the leadership style may also impact the affective team commitment, such as transformational leadership (Paoulucci, 2017) and authentic leadership (Ribeiro et al., 2018). Finally, team potency, which is the equivalent of team-efficacy in a team, was already found to be an important contributor to affective team commitment (Kirkman & Rosen, 1999). In fact, team potency, that comes from experiences of overcoming obstacles, can influence members' behaviors and subsequent affective commitment (Hammond, 2008). In that sense, team PsyCap, by enhancing team potency, may influence team outcomes (Newman et al., 2014), such as affective team commitment.

Indeed, research found that individual PsyCap is positively related to organizational commitment (Luthans & Jensen, 2005). Those findings make it interesting to clarify this relationship at a team level. The fact that affective team commitment influences the team to persist and adapt to difficulties to succeed in achieving goals (Hammond, 2008), could be related to team psychological capital. In that sense, teams with high team-efficacy, resilience and optimism are more likely to overcome challenges, and it was already found a positive relationship between those three variables and team satisfaction, cohesion and cooperation

(West et al., 2019). Although there is a lack of studies regarding team hope, by its definition, it influences the motivation and the engagement in tasks to pursue a goal. In that sense, since satisfaction, cohesion and cooperation emphasize the positive psychology field, in which affective team commitment can also be related to, the team PsyCap could create positive conditions for the team to work and to develop an emotional bond with their team.

Following the indications of Newman et al. (2014), there is a need for better understanding of how team PsyCap influences team outcomes, such as affective team commitment. This variable was chosen because it can be crucial to achieve team viability, since team PsyCap may not have the impact on team viability if the members are not emotionally connected to their team. To summarize, according to the results of previous studies, it is expected that team psychological capital could be positively related to affective team commitment, which is the first hypothesis of the current study:

H1: Team psychological capital relates positively to affective team commitment.

Affective Team Commitment and Team Viability

Considering the vast number of work groups in today's organizations, the overall production of knowledge depends to a large extent on the effectiveness of teams (Wutchy et al., 2007). This caused a proliferation of models and constructs that attempt to understand and describe the functioning of work teams and its effectiveness (Bell & Marentette, 2011). For instance, Hackman (1987) proposed three general criteria of effectiveness: (a) the productive output of the work group should meet the performance standards of those who will receive the work; (b) the group experience should, on balance, satisfy the personal needs of group members; and (c) the social processes should maintain the capability of members to work together on subsequent team tasks. The last criterion is often used to define the team viability construct, even though the term was not used by the author at the time. Since then, little has been done to develop team viability as a construct, which causes some confusion with terms of its definition (Bell & Marentette, 2011).

However, ensuring that a team is capable of future success is as important as ensuring team performance, since teams tend to exist for long periods of time (Bell & Marentette, 2011). Aubé and Rousseau (2005) define team viability as the capacity of the team to adapt to changes and to cope with challenges in an ever-changing environment. In line with this, Bell and Marentette (2011) define team viability as a team's capacity for the sustainability and growth

required for success in future performance. These authors highlight that team viability is most useful for teams that engage in multiple performance episodes, teams that are likely to respond to changes such as membership change, and for long-term organizational teams.

Although team viability remains a relatively understudied dimension of team effectiveness (Bell & Marentette, 2011), some studies tried to understand its antecedents. For instance, Balkundi and Harrison (2006) conducted a meta-analysis of 37 studies and found that social networks have important implications for team viability. Also, team cohesion emerged as an antecedent of team viability, in a way that attraction to the team or task may account for a strong motivational component needed for continued success (Bell & Marentette, 2011). Transformational leadership was also found to have a positive relationship with team viability (Boies & Howell, 2009), and as mentioned in the previous section, transformational leadership also relates to affective team commitment.

As suggested by Aubé and Rousseau (2005), supportive behaviors are likely to influence team viability, since by supporting each other, the members can better cope with challenges. Similarly, members with strong affective commitment to their team are more likely to produce favorable collaborative behaviors (Kang et al., 2007). In this sense, could be that committed members collaborate and give support to each other, which can impact on the team's capacity to overcome challenges and to stay together. In fact, affective team commitment was already found to strongly correlate with dimensions of effectiveness, such as team performance (Bishop et al., 1997; Meyer & Herscovitch, 2001). Furthermore, affective team commitment has shown a strong correlation with positive affect, which is at the base of the team viability (Marchand & Vandenberghe, 2013). Likewise, a previous study found that affective team commitment is positively related to all criteria of team effectiveness, including team viability (Paolucci et al., 2018).

Nevertheless, team viability is still not taken into consideration as much as other dimensions of effectiveness, which makes it crucial to be explored. After all, new organizational interventions could be implemented once the relationships between antecedents and team viability are established (Bell & Marentette, 2011). According to the literature review, it is expected that the emotional attachment of the team can enhance the team's willingness to stay as a whole, overcoming difficulties. Accordingly, the following hypothesis is proposed:

H2: Affective team commitment relates positively to team viability.

Team PsyCap and Team Viability: Mediating Role of Affective Team Commitment

Although several studies showed that individual psychological capital has positive impacts on many outcomes (Avey et al., 2011), it still remains very unclear how these impacts are made at a team level, due to lack of research. Thus, as suggested by Newman et al. (2014), future research should focus on understanding how team psychological capital can affect team outcomes, while mediated by other team variables.

Team psychological capital can motivate team members to work harder, once they believe in their capacity of achieving goals (team-efficacy), generate multiple solutions to problems (hope), have positive expectations about results (optimism), and persevere in the face of adversity (resilience). However, even though team PsyCap can impact positive team outcomes, it might not directly affect team viability if team members are not affectively committed to the team. In that sense, affective team commitment can have an intervening role between team psychological capital and team viability. The team's PsyCap will increase team members' emotional commitment to their team, improving their ability (and desire) of working together over time, achieving, as a result, team viability.

The input–mediator–outcome–input (IMOI) framework of group functioning (Ilgen et al., 2005) recognizes the existence of several variables as mediators, and the cyclical nature of feedback processes, which means that outcomes might become new inputs afterwards. In this model, inputs are all the teams' resources, whether external or internal, and may be considered at different levels of analysis. Moreover, mediators are emergent states and/or processes that allow team members to combine their resources while performing the tasks assigned by the organization. Finally, outcomes are the results achieved by the team, which may be in terms of performance or members' affective reactions, such as satisfaction, viability, or innovation. In the light of this model, team psychological capital can be conceived as an input from the team context, the affective team commitment as an emergent state, thus, the mediator variable, and team viability as the output.

As stated by hypothesis 1 and 2, it is expected that the team psychological capital will be positively related to the affective team commitment, since teams with high psychological resources could develop a commitment in which they desire to work in that team, instead of feeling obligated to it. By its turn, it is expected that affective commitment will be positively related to team viability, once this emotional attachment could make the members produce favorable behaviors, adapting to stay and work together as a team. This rationale leads to the

third hypothesis, centered on the role played by affective team commitment on the relationship between team psychological capital and team viability:

H3: Affective team commitment mediates the relationship between team psychological capital and team viability.

Method

Participants and Procedures

The sample was composed of 124 work groups from 83 Portuguese organizations, including 124 team leaders and 554 team members. The organizations belong to different sectors of activity, namely: services (62.5%), associative (21.7%), and industry (15.8%). Work teams also belong to different areas of activity, mostly services (38.3%) and commercial (18.3%), and the minority to projects (8.3%), administration (5.8%), production (3.3%), management (3.3%), and the remaining to unspecified departments. The number of members in the teams vary between 3 and 22 (M = 6; SD = 3.96). Regarding the longevity of the teams, it varies between 3 months and 46 years and 3 months (M = 8; SD = 8.81).

The team leaders ages vary between 18 to 67 years (M = 42.37, SD = 11.38), and 58.3% were males. Most of them (57.7%) have a bachelor's degree, while 9.9% have a master's degree, 27% have a high school diploma, and 3.6% studied till middle school. They have been leading the team for an average of 6 years (SD = 4.87), ranging from 1 month to 27 years. Regarding team members, their ages vary between 17 to 67 years (M = 35.83, SD = 11.61), and the majority is female (59.9%). Regarding their studies, 40.3% have a bachelor's degree, also 40.3% have a high school diploma, while 10.6% have a master's degree, and 6.8% completed middle school. The average time of them in the team was 5 years (SD = 7.25), ranging from 1 month to 43 years and 5 months.

The data was collected by the research team between 2017 and 2019[1]. The companies were contacted, personally or via e-mail, explaining the research and asking for participation, which characterizes the sample as convenient. To participate in this investigation, the work teams had to meet the following four criteria: 1) consist of three or more members, not

[1] I would like to thank the project VITEM team (that involves the University of Coimbra, University of Aveiro, University of Beira Interior, University of Valencia and University of Seville) and all the master's students involved in data collection, since I didn't participate in this step of the research.

including the leader; (2) recognize themselves and be recognized as a team; (3) relate interdependently; (4) intend to achieve a common goal. To ensure the representativeness of teams, one of the requirements in this study was to access the responses of at least half the members of each team.

The data collection was made through online and paper surveys. All participants provided their informed consent, while the confidentiality and the anonymity were guaranteed by the research team. The research team also assured to not make use of any individual result, only at a group level. To make the identification of each team, every team member of the same team had the same number on their surveys.

Measures

Team Psychological Capital[2]

This construct will be measured by the Psychological Capital Questionnaire (PCQ), developed by Luthans et al. (2007). The questionnaire has 24 items, being item 1 to 6 to measure team-efficacy, 7 to 12 for hope, 13 to 18 for resilience and 19 to 24 for optimism. Only team members answered the questionnaire through a Likert scale with 6 points, from 1 (totally disagree) to 6 (totally agree). A sample item for team-efficacy is "We feel confident when representing our working group in meetings with the administration", for hope "right now, we feel that we are actively pursuing our work goals", for resilience "usually we can manage the difficulties at work, in one way or another" and for optimism "with regard to our work, we always look at the positive side of things". The questionnaire was then translated to Portuguese and the psychometric properties of this version were tested in a previous study and Cronbach's alpha was .77 (Rebelo et al., 2018). In order to validate the factorial structure of the scale, it was performed an Exploratory Factorial Analysis (EFA). Together the KMO (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) value of .93 and the significance of the Bartlett's test ($\chi 2(276) = 6129.74$, $p < .001$) indicated that the factorial analysis is appropriate to our sample.

A Principal Component Analysis (PCA) was performed, with an orthogonal rotation (varimax) and free extraction of factors. The solution obtained was of 5 dimensions, which

[2] I would like to acknowledge that the analysis hereby mentioned were done in another master's thesis (Assunção, 2020), which had the same database, and to thank the student for the procedure.

explained 61.08% of the total variance, with the first dimension explaining 15.86%, the second 14.42%, the third 11.33%, the fourth 10.78% and the fifth 8.69%. Communalities were above .42 and saturations above .43. However, it was found that three items saturated in the fifth component (item 13, that belongs to resilience, and items 20 and 23 that belong to optimism). Those items are reversed, and this behaviour was also verified in previous studies (Rebelo et al., 2018). Thus, these three items were removed from the analysis. Similarly, item 7 had a greater saturation in the dimension of team-efficacy (.55), although it belonged to the dimension of hope, which was also removed from the analysis. Furthermore, item 1, although it belongs to the team-efficacy component, presented cross-loading with the optimism component and, therefore, it was also eliminated from the scale.

Finally, a solution consisting of 19 items was obtained, in which all presented communalities above .42 and saturations above .47, grouped into four dimensions, according to the components of psychological capital, and which explain a variance 61.04% (after removing the previously mentioned items, the value of KMO was .93 and Bartlett's test was significant [$\chi 2$ (171) = 4853.21, p <.001]). Team-efficacy explains 17.58% of the variance and is made up of items 2, 3, 4, 5 and 6 (once item 1 was excluded). Hope explains 17.20% of the variance and consists of items 8, 9, 10, 11 and 12 (since item 7 was removed). Optimism explains 13.39% of the variance and is composed of items 14, 15, 16, 17 and 18 (once item 13 was excluded). Finally, resilience explains 12.87% of the variance and consists of items 19, 21, 22 and 24 (since items 20 and 23 were removed). Regarding reliability, Cronbach's alpha values were of .86 for team-efficacy, .87 for hope, .73 for resilience and .77 for optimism, all of which are considered acceptable (DeVellis, 2003).

However, since PsyCap is defined as a second order factor, a new PCA was carried out, including the average scores of each dimension, in order to see if they all saturated in one component. This analysis was supported by the KMO test (.84), and by the Bartlett test, which was significant [$\chi 2$ (6) = 265.69, p <.001]. The result of the analysis was in line with what was expected, presenting a one-dimensional solution that explains 74.81% of the variance, with communalities above .71 and saturations above .84., while Cronbach's alpha was .88.

Affective Team Commitment

To measure this construct, we used the scale proposed by Batarseh et al. (2017), composed of four items adapted from the scale of affective team commitment by Allen and

Meyer (1999). One sample item is “I would really like to develop the rest of my career in this team”. The items were evaluated through a Likert scale from 1 (totally disagree) to 5 (totally agree) only by the team members. The scale was translated to Portuguese by Bastos et al. (2019) and the Cronbach’s alpha was .85. In order to validate the factorial structure of the scale in the present sample, it was performed an Exploratory Factorial Analysis (EFA), that showed a KMO (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) value of .84 and Bartlett’s test was also statistically significative ($\chi2(6) = 1383.857$, $p < .000$), both indicating that the factorial analysis is appropriate. The EFA’s results showed a one-factor solution, which explains 77.26% of the variance, with all the items loading above .80. The internal consistency assessed by the Cronbach’s alpha was of .90.

Team Viability

This construct was measured by the Team Viability scale, developed by Aubé and Rousseau (2005). It contains four items to measure the team’s capability to adapt in a changing environment, to integrate new members and to keep working as a whole in the future. Team leaders evaluated team viability of their respective team on a Likert scale from barely applies (1) to it applies fully (5). One example of item is “team members adapt themselves to changes in the workplace”. The psychometric properties of the Portuguese version of the scale were tested and the Cronbach’s alpha was .74 (Albuquerque, 2016). In order to validate the factorial structure of the scale in the present sample, it was performed an Exploratory Factorial Analysis (EFA), that showed a KMO (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) value of .79 and Bartlett’s test was also statistically significative ($\chi2(6) = 130.663$, $p < .000$), both indicating that the factorial analysis is appropriate. The EFA’s results showed a one-factor solution, which explains 61.03% of the variance, with all the items loading above .63. The internal consistency assessed by the Cronbach’s alpha was of .78.

Control Variables

Previous studies showed that the effect of team processes and conditions might be influenced by the team characteristics (e.g., Aubé & Rousseau, 2005). Thus, team size, team longevity and team virtuality were included in this study as possible control variables. To obtain information about team size and longevity, the leaders were asked about the number of members their team had, and for how long they have been working together. Regarding virtuality, team members were asked to distribute a percentage of 100% for nine types of

communication: videoconference, teleconference, chat, social network, forum, e-mail, electronic platform, memos, reports - in order to identify the most used by the team, so as to enable the calculation of the degree of virtuality using the equation of De Jong and colleagues (2008). The assessment of the teams' degree of virtuality resulted in an average of 35.68% (SD = 17.08, min. = 2.13% and max. = 94.92%).

Team size

This study took the size of the team as a control variable, as previous studies show that it affects processes, emergent states, and group outcomes (Hülsheger et al., 2009). In addition, West and Altink (1996) report that there is evidence that the larger the team, the smaller and less effective will be the attempts to innovate. Thus, the size of the team can impact the dynamic of it, since there is more complexity when we refer to larger teams.

Team longevity

The time since the foundation of the team is crucial for this study, once we are talking about the capacity of the team to stay together, and of commitment, which can also be interfered by the age of the team. There is evidence that it can impact the group processes (Katz, 1982).

Team virtuality

It is important to understand how the team communicates and interacts, using internet, since it can impact team processes and team outcomes (Schweitzer & Duxbury, 2010), especially since virtual teams can help or hinder groups (Schaubroeck & Yu, 2017).

Results

Previous Procedures and Aggregation

As this study was conducted at the group level of analysis and measures provided by team members were collected individually, it was necessary to aggregate variables obtained from team members (i.e., team psychological capital and affective team commitment) to the team level. The across-group and within-group indices were calculated to justify the aggregation. ICC (1) and ICC (2) assess the consistency of the aggregated measures, within and between teams, respectively, and represent the average level of agreement across the teams (Bliese, 2000; Woehr, et al., 2015). The r_{WG} index assesses the level of within-group agreement. According to James et al. (1984), median r_{WG} values generally over .70 are considered

sufficient to support aggregation. In this study, the aggregation of affective team commitment was supported, once its r_{WG} was 0.86, while the ICC (1) and ICC (2) were 0.33 and 0.69, respectively. For team psychological capital, it was calculated the r_{WG} and ICC (1 and 2) for each dimension of the construct. Thus, r_{WG} for team-efficacy (.92), hope (.93), optimism (.89) and resilience (.94) were considered adequate to justify the aggregation. Similarly, ICC (1) and ICC (2) for team-efficacy (.29 and .65), hope (.26 and .61), optimism (.20 and .53) and resilience (.18 and .50) were also in line with the values considered acceptable in the literature (Bliese, 2000; Klein & Kozlowski, 2000) and provided support to the aggregation of data to the team level.

Correlation analysis

Before the hypotheses testing, a correlation analysis of the variables under study was performed. Table 1 reports means, standard deviations, correlations and reliability coefficients of the variables used in this study. Regarding the control variables, only team size proved to be correlated with affective team commitment in a negative and statistically significant way (r = -.178, p <.05). Therefore, according to the recommendations of Becker (2005), only this variable was assumed as a control variable in the following analyzes.

Table 1.

Descriptive statistics and correlations between variables

	M	*SD*	1	2	3	4	5	6
1. Team Psychological Capital	4.67	.401	(.88)					
2. Affective Team Commitment	3.83	.547	.505**	(.90)				
3. Team Viability	4.10	.632	.269**	.387**	(.78)			
4. Team Size	6.16	3.95	-.69	-.178*	-.110	-		
5. Team Age	8.07	8.80	-.015	-.169	-.039	,185*	-	
6. Team Virtuality	35.6	17.0	.114	.037	-.060	,084	-0,89	-

Note. N=124 teams. Reliability coefficients (Cronbach's alpha) are reported in brackets. * $p < .05$. ** $p < .01$.

Looking at Table 1 it is possible to check that correlation coefficients are in line with what is expected in the hypotheses. For instance, the correlation coefficients between team

psychological capital and affective team commitment (r = .505, p < .001) and team viability (r = .269, p = .003) were positive and significant, as well as the correlation coefficients between affective team commitment and team viability (r = .387, p < .001).

Hypothesis testing

Hypotheses were tested using PROCESS, a macro from SPSS developed by Hayes (2013). Model 4 of this macro allows, through bootstrapping, the construction of a 95% confidence interval for assessing a simple mediation (a 5000 estimated bootstraps samples will be used to build the interval). The indirect effect on the simple mediation is calculated from the product of the independent variable's coefficients on the mediator, and from the mediator on the dependent variable. The effect is statistically significant if zero is not included between the maximum and minimum limits of the 95% confidence interval generated by PROCESS. Team size was included as a control variable only for the mediator (affective team commitment). Table 2 shows the results of the mediation analysis.

Table 2.

Mediation Analysis

			95% CI		
DV/ Predictor	b	*SE*	LLCI	ULCI	R^2
Affective Team Commitment					.275**
Team Psychological Capital	.674**	.105	.465	.883	
Team Size	-.019	.010	-.041	-.001	
Team Viability					.156**
Affective Team Commitment	.388**	.111	.167	.610	
Team Psychological Capital	.156	.152	-.145	.457	
Indirect effect	.262	.092	.115	.492	

Note: N= 124 teams. DV=dependent variable. b=non-standardized regression coefficient. SE=Standard error. CI= confidence interval. LLCI=lower CI limit. ULCI= Upper CI limit. ** *p < .01*.

Regarding the first hypothesis, results indicated that team psychological capital was a significant predictor of affective team commitment (b = .674, SE = .105, p < .001), explaining 27.5% of the variance of that variable (R^2 = .275, F (2, 121) = 22.9, p < .001). Concerning the second hypothesis, results revealed that affective team commitment was a significant predictor

of team viability (b = .388, SE = .111, p < .001). Hence, results provided support for these two hypotheses.

Results also indicated that the indirect coefficient was significant, as zero is not included between the maximum and minimum limits of the 95% confidence interval generated by PROCESS (b = .262, SE = .092, 95% CI = .11, .49), supporting the third hypothesis. Since the direct effect was not significant (b = .156, SE = .152; p = .307), which means that team psychological capital was no longer a significant predictor of team viability after controlling for the mediator (affective team commitment), the mediation identified was a full mediation.

Discussion

Since teams in organizations have become a very common way to work, it is extremely important for organizations and individuals to understand how to improve the relationships between members and the effectiveness of the team. For that matter, constructs that were developed at the individual and organizational level, such as psychological capital and affective commitment, respectively, are now also being studied at the team level. Furthermore, teams in organizations can work together for several years, which makes it crucial to understand how teams can work better at the long term.

The relevance for conducting this study was to clarify how team psychological capital can influence favorable team outcomes. It was expected that team psychological capital would contribute to a positive atmosphere where people can develop an emotional bond. Indeed, our results supported a positive relationship between team psychological capital and affective team commitment (Hypothesis 1). Other authors (Newman et al., 2014) already suggested that team PsyCap may influence team outcomes and processes, since team-efficacy and resilience are generally linked to engagement, which is similar to commitment, referring to a state of well-being that can inspire positive emotions and make employees more willing to stay at the job (Hallberg & Schaufeli, 2006). Thus, the psychological resources of the team can influence the establishment of a positive and supportive environment in which members will develop an emotional connection with their team.

Contributing to the literature on affective team commitment, our results supported a positive relationship between affective team commitment and team viability (Hypothesis 2). That means that teams in which members are affectively committed to the team would be able to continue together, generating positive results on team viability. This result is in line with

previous literature (Paolucci et al., 2018), that also found a positive relationship between these two variables. This positive relationship may be because teams that have an emotional commitment would put more effort on trying to keep the team as a whole, different then when members are not emotionally committed. This finding highlight what was already suggested by Meyer and Herscovitch (2001), that affective team commitment would be beneficial to teams.

Furthermore, the main objective in this research was to understand how affective team commitment mediates the relationship between team psychological capital and team viability (Hypothesis 3). The results showed that it positively and fully mediates this relationship. Although there are no previous studies that support this mediation, the hypothesis was based on studies on the direct relationships between the variables under analysis (between team psychological capital and affective team commitment, and between affective team commitment and team viability). This finding emphasizes that teams with higher levels of psychological capital are more likely to continue working together in future tasks and for a longer time when they are emotionally committed to their respective teams, and, in turn, this commitment is enhanced by the psychological capital of the team. The mediator role of affective team commitment was a full mediation since there was no significant relationship between team psychological capital and team viability. This relationship may not be significant because although the resources of psychological capital are positive, if people are not emotionally connected to the team, they may not make effort to stay in the team. In that sense, affective team commitment influences the team to persist and adapt to difficulties to succeed in achieving goals (Hammond, 2008).

Conclusions and Implications

The relevance and the contribution of our research is reflected in complementing the existing work in the field. This study has theoretical relevance since it aims to enlarge the body of knowledge of team psychological capital and affective team commitment by verifying their relationship with one another and their impact on team viability. According to Newman et al. (2014), there is a need to study psychological capital at different levels. This was considered by this study, that took the team level of analysis, contributing to enlarge the knowledge of team PsyCap. Furthermore, team viability is also an understudied construct, which makes this study relevant to this field.

The present research has practical relevance as well. In the business context, the outcomes of PsyCap can have a lot of impact. Although it has positivity in its own resources, managers and leaders can take advantage of evidence-based answers in terms of how PsyCap can influence results (Luthans & Youssef-Morgan, 2017). Thus, it can benefit organizations that desire to understand how they can improve teamwork, creating harmonious and effective teams. Indeed, organizations nowadays aspire to be more positive and to promote employee well-being, and since PsyCap has a very low cost of development, the return has shown to be very high (Luthans et al., 2006).

Indeed, Luthans and his colleagues (2006) developed the Psychological Capital Intervention (PCI), that consists in a highly focused micro-intervention in groups, that takes up to 1 to 4 hours. Salanova and Ortega-Maldonado (2019) found that PCI was used in 58% of their literature review on PsyCap interventions, pointing out that the positive outcomes obtained with such intervention makes it a cost-effective and useful tool for Human Resources Development. Such outcomes include the increase of PsyCap of about 5%, increases in performance, and in engagement (Salanova & Ortega-Maldonado, 2019). The increase in engagement is particularly interesting to approach in this thesis, since its meaning – "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli et al., 2002) – describes an emotional and motivational aspect, such as commitment. In that sense, since we saw in this study that the team PsyCap is positively related to affective team commitment, an increase in the team PsyCap may have great impact in the team outcomes. If combined with team building activities, increasing the affective team commitment, it could be a great intervention to achieve team viability.

Furthermore, while the capacities of team psychological capital can be trained and practiced over time (Luthans, 2012), affective team commitment can also be promoted, with intervention strategies, such as team building (Neininger et al., 2010). In that sense, investing in the development of such processes can increase the team viability. On its turn, team viability is most useful for teams that engage in multiple performance episodes, for executive teams that are likely to respond to changes such as membership and environmental change, and for long-term organizational teams such as project or design teams (Rico et al., 2011). Thus, knowing that psychological capital, by enhancing affective team commitment, can impact team viability, leaders can prepare interventions that better fit the needs of their teams.

Limitations and Suggestions for Future Research

One of the limitations of the present study is that, due to its cross-sectional nature, causal relationships between the variables cannot be inferred. Therefore, it is suggested longitudinal studies to clarify the relationships for further investigation. Another limitation consists in the fact that it may not be susceptible for generalization, since the sample was made up of Portuguese teams and taken by convenience. To overcome such limitation, future research can adopt samples from different countries, as well as study the difference between distinct cultures, for example, individualistic and collectivist cultures, since what is considered positive in one culture may not be in another culture. In general, extending this research to other samples would also add knowledge to the three constructs. Another limitation is related to the possible common source bias, that refers to a systematic error due to the fact that data is collected using the same method (Conway, 2002), since team psychological capital and affective team commitment were both obtained from team members. Either way, as the third variable, team viability, was obtained from team leaders, we have a multi-source approach which lowers the risk of having the aforementioned bias (Chang et al., 2010). Furthermore, risk of having common source bias is also reduced by aggregating the variables to the group level (Podsakoff et al., 2003). However, while having the same method of collection can cause some bias, having multiple sources can also cause some disparities by comparing leaders and members perceptions, which can have different perspectives. Furthermore, the questionnaires were based on the perceptions of team members and leaders, since all measures are self-report, which may be subjected to the phenomenon of social desirability or contamination. For instance, according to Rousseau and Aubé (2010), this can influence the leaders to present a favorable picture of the team they are supervising.

The fact that this study has companies from different industry sectors, and teams also belong to different areas inside companies, might generate differences between teams' and leaders' answers. By combining people from different industries/areas results might be less accurate, since expectations and exigence might vary from one sector to another or between departments. Also, it is likely that affective team commitment would have a greater effect on team viability, during earlier stages of its development, when team members are not still well-acquainted (Hackman, 2012), which makes it interesting to compare teams at different stages.

Regarding the statistic model, in this study it was considered just one input, one mediator and one output. Thus, more complex models can be studied for further investigations,

for instance adding more variables, to check how different constructs can be related and how it can impact the outputs. Similarly, a broader study can be conducted considering the other dimensions of team effectiveness (team performance and team process). Additionally, a suggestion for further investigations is to study how other variables might moderate relationships between psychological capital and dimensions of team effectiveness, such as leadership behavior and service climate; or variables that could mediate the relationship as well, for instance team communication and team empowerment (Newman et al., 2014).

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Appendixes

Note: the following appendixes are a requirement from the WOP-P Consortium, with the aim to help the students continuously improve their work, by receiving suggestion from its tutors (Appendix A) and from other professors (Appendix B). I would like to thank both of my tutors and the PhD. Pillar Ripoll for taking the time to provide me insightful feedbacks and to help me catch a few errors, improving my master's thesis.

Appendix A - Response to the feedback of Position Paper

The feedback I received from my tutors was regarding improving the abstract, the section of methods, and better highlight the importance of the study. The last point was also mentioned by a third teacher who gave a written feedback. In that sense, I was able to improve the abstract by focusing more on the objectives of the present study and dividing it into 5 topics. Furthermore, they mentioned I should specify the measures by putting an item of each variable in the description, which was achieved. It was also suggested to extend the explanation on the IMOI framework for hypothesis 3, which I tried to better explain it in a concise way. Regarding the relevance and importance of the study, the results really showed how important was to take affective team commitment as a mediator, since it showed a full mediation. I tried to make it clear the practical and theorical relevance this study has for the academy, as well as for leaders and organizations.

Appendix B – Response to the feedback of Research Work

After presenting my research work to PhD. Pilar Ripoll, I've got a positive feedback regarding the size of the sample, the adequacy of the questionnaires, and the description of results and practical/theoretical implications. As suggestions to improve, it was suggested to justify the choice of the control variables, which was explained in the referred section. Regarding the Team PsyCap measure, it was pointed that the Cronbach alpha of the global Team PsyCap wasn't mentioned, which was then included. Lastly, a final recommendation would be to formulate the hypothesis considering each dimension of the PsyCap, which wasn't attended because the Tem PsyCap is a whole construct that considers 4 dimensions together, not separately, and to broke it down to these dimensions, would mean that it would change the rationale of the study.

Regarding the feedback of my tutors, they have also highlighted the same positive aspects. For improvements, they suggested to better develop my abstract, which was attended. Furthermore, it was suggested to rethink the importance of some studies and formulation of some sentences, which was improved by deleting or adding new studies and better formulating the thoughts around the topics. The same suggestion of PhD. Pilar Ripoll, to improve the section of control variables, mainly define the types of virtual communication, was also incorporated in this final version. Regarding the implications, it was asked to suggest how we can develop Team PsyCap in organizations, which was then explained. Lastly, the remaining corrections were related to some typos in the written paper, such as English and number typos, which was all corrected, as well as the final references and tables were reviewed to attend the 7th APA edition.