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THE ROLE OF EMOTIONAL INTELLIGENCE IN PROJECT SUCCESS, MEDIATED BY THE MANAGEMENT OF CONFLICT, COMMUNICATION AND TRUST

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ABSTRACT

Companies have widely used project management to face the fast-paced challenges of today's business environment. In addition to the techniques and procedures available in this area of knowledge, personal skills have been growing as tools for project success. Emotional intelligence (EI) has been studied as a soft skill that is prominent as a research topic. Although, extant literature does not discuss how EI influences project success when team management aspects, such as relationship conflict management, communication management, and trust-building, are put into place. This study aimed to determine how emotional intelligence influences the success of projects and under the mediating effect of these team management aspects. A quantitative survey was carried out, with data collected by survey (n=280) and analyzed through structural equation modeling and multiple regression analysis for the mediation's effects, complemented by a latent class analysis to profile the emotional intelligence in the sample. The results showed that emotional intelligence positively influences project success mediated by executive actions of managing conflicts, communication, and trust. Three distinct emotional intelligence profiles were also observed, with significant differences between the extremes, concerning the studied constructs. As a contribution to this research, findings advance the understanding of the relationship between emotional intelligence and project success, which is conditioned by the executive actions of team management.

Contribution/Originality: This study contributes to the existing literature helping explain the complex relationship between emotional intelligence and project success by identifying and confirming three different mediating effects with Relationship Conflict Management, Communication in the Project Team, and Trust Establishment.

1. INTRODUCTION

The Project Management Institute (PMI) identified that organizations wasted 12% of their investment due to the poor performance of their projects (PMI, 2019), which brings to the project area the search for greater efficiency. Success in projects with sponsor involvement and recognition is still a goal achieved by less than 76% of projects (PMI, 2017). To change this scenario, organizations understand that project managers (PM) are the main actors to improve project performance (Eskerod & Vaagaasar, 2014; Oliveira & Rabechini, 2018), including in topics related to social management, to politics and culture, allowing their teams to consider the position of many different actors and their conflicts of interest (Aaltonen & Kujala, 2010). Troth, Jordan, Lawrence, and Tse (2012), however,

point out that not only the PM participates in this social construction, the interaction of the project team members between each one collaborates to create an excellent emotional environment that allows the best use of essential skills for the promotion of performance.

In this context, companies invest a significant sum of amounts in professional training for their teams. According to a survey conducted by ABTD (2018), this amount reaches US$ 150/ employee year per. In the same survey, 27% of this amount is indicated for behavioral and leadership training. However, much of what these trainings deliver is a standardized information package, which follows a prescriptive character and has no proof of effectiveness (Pfeffer, 2015). Despite the criticisms of this training, among the behavioral aspects required by the PM and the project team, emotional intelligence (EI) is evidenced as an established competence, and its effectiveness has been studied (Cherniss, 2010; Turner & Müller, 2005). Clarke (2010c) points out that there is evidence that EI can be developed and applied in situations where different actors need to come together to pursue a shared goal while trying to negotiate the divergent interests of their teams (Clarke, 2010b).

When we analyze projects on what the time is limited to build relationships, the use of emotions to improve the response to other project members becomes a skill present in teams (Druskat & Druskat, 2006), allowing social interactions to be built positive, making the team effective and collaborative (Clarke, 2010b; Maqbool, Sudong, Manzoor, & Rashid, 2017). Such interactions reduce the team's negative response, improving relationships, which, in turn, facilitates communication, creativity, and knowledge exchange (Rezvani, Barrett, & Khosravi, 2018). Hereupon, in which factors related to the behavior of the PM and the project team influence the performance of projects, this article aims to determine how EI influences the project success (PS) and under the mediating influence of relationship conflict management, communication management, and trust-building. The literature recognizes these factors exist (Müller & Jugdev, 2012; Pinto & Slevin, 1987), which allows contributions to the practice of project management, demonstrating development paths for future project teams, in order to ensure better performance management, as well as assisting sponsors and clients in selecting the best PM and team members involved with project management.

The results found are in line with previous research by Rezvani et al. (2018) and Maqbool et al. (2017), who identified the positive influence of EI in the PS. Proof of this mediating effect is the most significant result of this research, helping to explain the complexity of the relationship between EI and PS (Clarke, 2012), further complemented by identifying different profiles of individuals regarding EI, with statistically different responses.

We organize this article into six sections: the following section presents the theoretical foundation that served as the basis for constructing the pillars that support the research. The third section provides details of the research method and procedures, which guarantee the methodological rigor used. The fourth section presents the results, while the fifth section presents the discussion of these results. Finally, the sixth section offers the conclusion, contributions, limitations, and suggestions for future research.

2. THEORETICAL BACKGROUND

2.1. Project Success

Projects and project management are considered the heart of implementing an organizational strategy. Therefore, measuring and controlling projects is strategically important for companies (Pinto & Slevin, 1987). However, as projects are unique and uncertainties are inherent to their management (Aaltonen & Kujala, 2010), the use of metrics in project management encounters difficulties (Fortune & White, 2006; Jugdev & Müller, 2005; Shenhar, Dvir, Levy, & Maltz, 2001; Westerveld, 2003). Even if there are barriers in the validity of measuring the performance of a project and no set of agreed metrics (Fortune & White, 2006), compliance with the schedule, the cost of implementation, and the quality of delivery are the most cited metrics to measure project success (Atkinson, 1999). Complementing the metrics above, it is still necessary to take the point of view of various stakeholders, as each of the judges the PS differently, depending on their personal goals (Müller & Turner, 2007a).

Jugdev and Müller (2005) identified in a literature review on PS four conditions necessary, but not sufficient, for PS. These conditions correspond to alignment with interested parties, collaborative work, empowerment of the PM, and interest of the project sponsor. We must also consider that there is a relationship between time and the assessment of PS criteria. At the end of the project, we can measure success criteria usually related to project management performance, while other criteria can only be measured and evaluated months or even years later (Müller & Turner, 2010b).

Thus, time and the business result play an essential role in determining the PS (Shenhar & Dvir, 2010). Other authors have developed metrics composed of success criteria, considering the project team, suppliers, customers, technology, business, and specific criteria for each project, in a concise flawed perspective (Müller & Turner, 2010b). Such perspective brings a narrower vision but is aligned with the immediate recognition after the end of the project (Westerveld, 2003), focusing more on the PS than on the organization's strategic success.

Müller and Turner (2010b) focus on the success measurement at the end of the project so that changes made to scope, time, or cost during the project, or even the relative importance of the success criteria, will be accumulated in the result for project evaluation. Following this point of view, customer acceptance refers to the final stage of the implementation process. So, one can determine the project's final effectiveness, given that success in the other stages of the implementation process and communication with the client/sponsor already indicates that the client will accept the resulting project (Müller & Turner, 2010b). Thus, the project's strategic importance as part of the companies' management program is evident. Its strategic importance with the business results is also evident, a view defended by Shenhar et al. (2001).

However, this article will consider that a PS might recognize from the perspective of the PM, project team, and sponsor reached the effectiveness criteria according to the scale of Müller and Turner (2010b). In addition, to be valued by the internal and external stakeholders, thus accepted and used by the clients for whom the project is intended (Maqbool et al., 2017; Müller. & Turner, 2010b).

2.2. Emotional Intelligence

Influenced by Gardner (1983), by the concept of social intelligence updated by Cantor and Kihlstrom (1987) and by Epstein (1984) constructive thinking and theories of emotions, Salowey and Mayer (1990) gathered in the same body of research, which they called EI. EI is a construct that represents "the subset of social intelligence that involves the ability to monitor the feelings and emotions of someone and others, discriminate between them and use this information to guide thinking and actions" (Salowey & Mayer, 1990).

In line with the discussion of EI, Salowey and Mayer (1990) brought out the importance of studying the way people assess and communicate emotions and their ability to monitor the mood and temperament of other people and make use of this knowledge to predict your future behavior. In the same research, the authors state that to use EI, people resort to four domains, which are: (i) perception of emotions, (ii) use of emotions, (iii) understanding emotions, and (iv) control and transformation of emotion.

In a specific reading of the research by Salowey and Mayer (1990), Goleman (1998) described a model adapted directly for application in companies. Goleman sought to identify how leaders could be more effective at work using EI (Boyatzis, Goleman, & Rhee, 2000), based on the elements of Self-Awareness, Self-Management, Social Awareness, and Social Skills. Described by Goleman (1998) as a competency and defined as a learned ability based on EI that results in increased performance at work, this concept focused on leadership and allowed for the description and study of a variety of competencies or specific capabilities that may be related to effectiveness and describes the groupings within which these competencies are organized (Boyatzis et al., 2000).

In project management, EI can be more decisive (Druskat & Druskat, 2006) because in projects, interactions are usually temporary and often unique (PMI, 2017a), carried out by groups that are often culturally different (Thanetsunthorn & Wuthisatian, 2019). Additionally, projects are performed in an environment of uncertainty and

pressure for results (Pryke & Smyth, 2006). Consequently, we can perceive EI as a capacity of PM who need to lead a distinct group to achieve expected results (Goleman, 1998). Finally, emotionally intelligent teams develop trust and an emotional bond between their members and project stakeholders to pursue PS (Rezvani et al., 2016). They use EI to maintain positive work relationships, influencing personal relationships (Druskat & Druskat, 2006). Therefore, we can affirm that EI positively affects the PS, being described in the H1 hypothesis.

H1: The project team's EI positively impacts the PS.

However, relating EI with PS is an initial implication, as despite having a significant influence on social situations, as well as on the feeling of trust, cooperation, and communication (Rezvani et al., 2016), it is through mediators that the influence on the result of the project manifests itself, which leads us to other hypotheses that follow.

2.3. Relationship Conflict Management

We recognize in this article EI as a skill (Goleman, 1998). In the same way, we can expect PM who have high levels of this skill to help build their team members' confidence and competencies (Lin, Wang, Chen, & Chen, 2019). However, conflicts are inevitable within the scenarios of uncertainty and volatility of projects (Druskat & Druskat, 2006). Although the conflicts could be beneficial when related to the ways of performing tasks, reduce the rigidity of concepts, helping to create new ideas and opinions, promoting communication and creativity in the team (Wu, Liu, Zhao, & Zuo, 2017; Wu, Liu, Zhao, Zuo, & Zheng, 2019). Additionally, this situation can promote positive social relationship interactions to establish a high-quality relationship, creating a state of high trust, reciprocity, and commitment (Wang, Lu, & Fang, 2019).

Based on the above ideas, we can understand that PMs who have high emotional awareness and high ability to perceive emotions can distinguish positive and creative conflicts from relationship conflicts, reinforcing the emotional bond within the team (Clarke, 2010b; Maqbool et al., 2017; Müller & Turner, 2010b; Rezvani et al., 2016). In this way, EI allows for the perception and appreciation of good conflicts, which leads us to propose the H2 hypothesis.

H2: Team EI positively impacts relationship conflict management within the project team.

Dasgupta (2019) classified the influence of conflict on the project's outcome as devastating, as relationship conflicts lead to lack of communication, lack of effective exchange of information, lack of creativity to solve complex tasks, as well as passive behavior between project teams, which results in poor performance. Therefore, the proposed H2b hypothesis is adopted.

H2b: The project team's management of relationship conflict positively impacts the PS.

To reduce relationship conflicts, PMs must be charismatic leaders, helping to strengthen team members' confidence and skills (Lin et al., 2019). This leadership ensures a more outstanding team committed to the PS (Ehrhardt, Miller, Freeman, & Hom, 2014). The effort reinforces Müller and Turner (2010) assertion that self-aware and socially conscious leaders can reduce conflict within project teams. Therefore, relationship conflict management is a possible way for EI to influence the PS, which leads to the H2c hypothesis.

H2c: The influence of EI on the PS is mediated by relationship conflict management.

2.4. Communication in the Project Team

We can consider that communication represents an essential point in the life of any executive since communicating is necessary to perform the tasks assigned to us daily, which suggests that in a project, the manager may spend much money on their time communicating (Kerzner, 2011). It is through communication that the PM makes its most outstanding contribution. In a systematic literature review on the main design failure factors, Gupta et al. (2019) pointed out poor communication as one of the three main failure factors of projects, alongside the deficiency of the PM and low support from top management, as good managers encourage a positive emotional tone

within the team that promotes a constructive communication environment for individuals to operate (Troth, Jordan, & Lawrence, 2012).

Furthermore, frequent communication can strengthen a relationship and improve the transparency of cooperation, reducing information asymmetries and thus increasing trust (Jiang & Zhao, 2019). In other words, good communication strengthens social and emotional bonds (Wong, Cheung, Yiu, & Pang, 2008). These ties facilitate empathy and promote a constructive environment within the project (Troth et al., 2012). For this reason, project teams with high EI can reduce negative responses to conflict, facilitating communication, creativity, and knowledge exchange (Rezvani et al., 2018), giving rise to the H3 hypothesis.

H3: Project team EI positively impacts communication management.

Communication can be identified as a critical success factor. Maintaining an appropriate communication channel with the client at the beginning of the project allows the team to listen to the client, so that maintaining this channel throughout the project creates the possibility of adjusting the inevitable deviations from the project environment to the client's demand (Pinto & Slevin, 1987), increasing the probability of PS. In this way, we can describe the H3b hypothesis.

H3b: The management of communication by the project team positively impacts the PS

Emotionally competent leaders can manage positive and negative emotions, encourage new ideas, and set an upbeat tone to communication (Gardner & Stough, 2002). Therefore, the way communication channels are created and managed might be how EI influences PS, leading to the H3c hypothesis.

H3c: The influence of EI on the PS is mediated by communication management.

2.5. Trust Establishment

Trust between individuals and groups within an organization is an essential ingredient in the organization's long-term stability and the well-being of its members (Cook & Wall, 1980). In this context, organization and well-being are composed of the psychological state and psychological experiences of the members of that organization (Rousseau, Sitkin, Burt, & Camerer, 1998). That said, a helpful concept in Social Science refers to the extent to which someone is willing to trust the words and actions of other people (Cook & Wall, 1980). However, trust is a mental state relative to a single moment in time, and the relationship between the parties determines the intensity of trust within the organization (Rousseau et al., 1998), as the result of interactions will lead to the updating of perception about the other over time (Mayer & Schoorman, 1995). Diallo and Thuillier (2005) described these concepts in the project scenario, trust being "a construction composed of elements, delegated activities, autonomy and trustworthy behavior that constitute the primary factor in the PM's relations with the project team and other stakeholders," since cohesion, a result of the climate of trust, is formed by interpersonal relationships and the perception of emotions.

Thus, we must consider that it is the daily relationships that build trust. Therefore, for the scenario to be fruitful, the PM, the team, and the sponsors must make great efforts to create a friendly environment, improving teams' trust that promotes long-term cooperative relationships (Kermanshachi & Safapour, 2019). EI allows project teams to understand and manage their feelings and the emotions of other members when conflicts arise (Rezvani et al., 2018) because if interpersonal trust is a construction of daily relationships (X), teams will depend on EI to build this familiar scenario even in the presence of conflicts, which leads us to H4 hypothesis.

H4: Project team EI positively impacts trust within the project team.

Rezvani and Khosravi (2019) recognized that trust shows a positive correlation with team performance. Consequently, efforts are needed to improve trust between team members, to promote cooperative relationships in order to achieve project success (Pinto, Slevin, & English, 2009), giving rise to the H4b hypothesis.

H4b: Trust within the project team and with stakeholders positively impacts the PS

On the other hand, trust in relationships is related to each particular interaction we have with other project team members (Lau & Rowlinson, 2011), EI is the tool that allows project teams to understand and work through the negative feelings that give rise to conflicts (Rezvani et al., 2018). By avoiding blocking communication and creativity (Troth et al., 2012), establishing trust may be how EI influences PS, which leads to the H4c hypothesis.

H4c: The influence of emotional intelligence on the PS is mediated by the establishment of trust.

Considering the relationships described in the theoretical foundation, this research also seeks to identify the strength that each possible mediator identified in the literature review (relationship conflict management, communication management, and trust establishment) has in constructing the PS. We can see the relationship demonstrated by the complete model described in Figure 1.

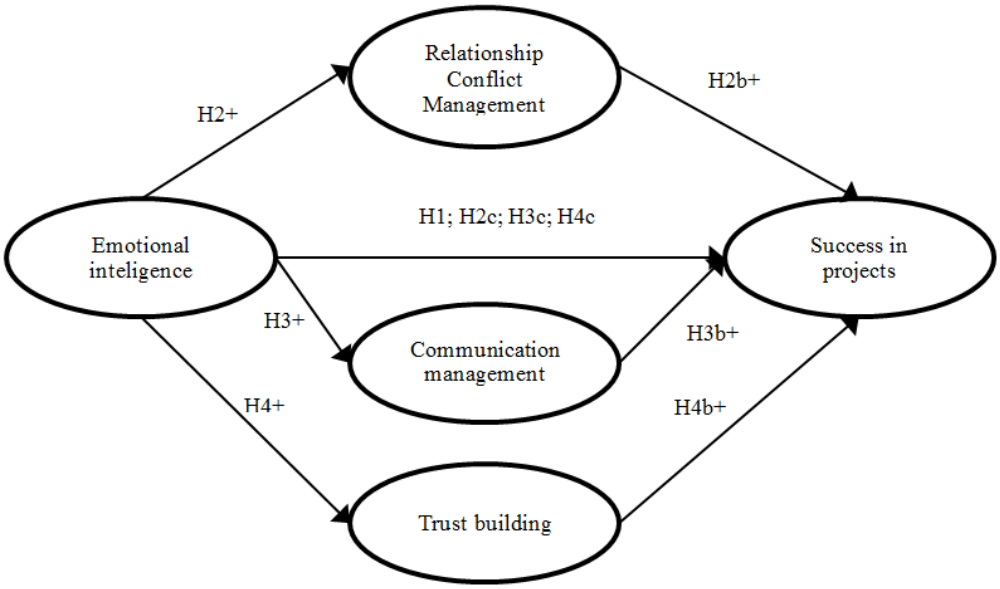

Figure-1. Relationship between variables and hypotheses.

3. RESEARCH METHOD AND TECHNIQUES

This research adopted a quantitative approach and applied it to project teams, as it seeks to identify how the independent variables EI, Relationship Conflict Management, Communications Management, and Establishment of Trust affect the dependent variable PS. We also use the bootstrapping technique proposed by Hayes and Preacher (2014), which uses hierarchical linear regressions to analyze other constructs' mediation capacity concerning EI.

To carry out the translation of the scales, which were in English, the translation and semantic validation procedure proposed by the International Test Commission (2017) was carried out, the result of the translations was compared and synthesized by the researcher and three experts in the project management, discrepancies were evaluated and adjusted by the author. Finally, the questionnaires were prepared for distribution on an online platform, following the procedures suggested by Ritter and Sue (2007). We base EI measurement on Goleman (1998), Conflict Management and Communication Management on Clarke (2010), Building trust was based on Cook and Wall (1980), and success in projects was based on Müller and Turner (2010b).

Google Forms was considered due to its ease of application, automatic adaptation to the smartphone, and its coverage in Brazil. Variations were measured using a seven-point Likert scale, where one describes "strongly disagree" and 7 "strongly agree," following the original format of the scales. Nearly 3000 survey invitations were sent, and 280 questionnaires valid until November 19, 2020, were obtained, close to 10% in the survey response. The number of questionnaires exceeds the recommendation of Hair, Hult, Ringle, and Sarstedt (2014), which indicates five respondents for each statement, which, in this study. After the initial filtering, the characterization of the profile of the samples was started. In the analysis of direct hypotheses, we used structural equation modeling to

test direct hypotheses, with partial least squares estimation, using SmartPLS as software, based on a variance matrix, as it is more suitable when the study's objective is predictive (Hayes, 2017). Multiple regressions were chosen to test the indirect mediation hypotheses, using PROCESS® macro 4, based on Hayes and Preacher (2014).

To identify the latent profiles in the sample regarding the EI, the search for heterogeneity not observed in the sample was undertaken. In order to analyze these distinctions in emotional profile and their results, an analysis of latent classes was performed (Weller, Bowen, & Faubert, 2020), using the poLCA package (Linzer & Lewis, 2011) for SPSS v.27. Then these classes were compared through an analysis of the difference between the means of the study constructs.

4. RESULTS

Initial analyses show a balance between project-based (37%) and project-oriented (63%) companies. Thus, those whose main activity is the elaboration of projects, and those who use projects for management, respectively. The respondent's position within the project also reached a broad spectrum, with 44% of PMs, 41% of team members, and 15% of sponsors in the sample. For data validation, the model described in Figure 1 was assembled in SmartPLS software version 3.2.8. In this model, the scales were related to their constructs. After this step, we followed the recommendation by Hair et al. (2014). Convergent and discriminant validity is shown in Table 1.

Table-1. Convergent and discriminant validity.

Construct	AVE	R^2	AC	1	2	3	4	5	6	7	8	9
Self-awareness	0.662	0.357	0.498	0.814								
Self-management	0.656	0.640	0.738	0.366	0.810							
Social Consciousness	0.799	0.520	0.749	0.388	0.412	0.894						
Trust Building	0.654	0.180	0.867	0.238	0.349	0.289	0.808					
Communication Management	0.548	0.251	0.720	0.206	0.361	0.400	0.379	0.741				
Relationship Conflict Management	0.607	0.578	0.838	0.299	0.436	0.383	0.596	0.645	0.779			
EIR social skills	0.559	0.816	0.802	0.407	0.606	0.535	0.385	0.402	0.433	0.747		
Emotional Intelligence	0.403	0.000	0.862	0.597	0.800	0.721	0.424	0.458	0.509	0.903	0.634	
Project Success	0.635	0.671	0.884	0.430	0.516	0.448	0.557	0.626	0.751	0.537	0.627	0.797

Note:
a) AC = Cronbach's Alpha; AVE = Average Variance Extracted, or Average Variance Extracted. In bold, the square root of the AVE.
b) RCM=Relationship Conflict Management; CM=Communication Management; TB=Trust Building; PS=Project Success; EI=Emotional intelligence; EIC= Self-Awareness; EIG= Self-management; EIR= Social awareness; EIS= Social Skills; Γ = path coefficient; sd = standard deviation.

At that time, the final validation of internal consistency and composite reliability for the RCM, CM, TB, EI, and PS constructs also took place. Again, considering the results obtained, the model appears internal consistency since the Cronbachs alpha parameter (AC) was more significant than 0.70 and had compound reliability in the constructs, as it was found to be between 0.70 and 0.90. For this model, we calculated the Goodness-of-Fit (GoF) value of 0.5365, which is higher than the minimum acceptable value of 0.36, considering the use of confirmatory factor analysis for Social Sciences (Sun, 2005).

With the validated scales, the next step was to verify the degree of multicollinearity, indicating the level of correlation between the independent variables (Hair et al., 2014). As appropriate for the study, it is indicated that there is a high correlation effect between the independent variables with the dependent variable, but the opposite must be found between the independent variables (Hair et al., 2014).

For this measurement, the Variance Inflating Factor (VIF) was selected. In evaluating the VIF test, we identified only the GC2 (5.573) and GC3 (5.740) scale items with values greater than 5.0, which is the value recommended by Hair et al. (2014). However, as the scales presented the values of R^2, Cronbachs alpha, and

Composite Reliability as expected, it was decided to keep it in the model, as adjustment indicators should be looked at as a set and not individually (Hair et al., 2014). To assess the bias of the common method, we used the comparison of partial Pearson correlations and the Pearson correlation controlled by a DS3 social disability scale. Thus, we looked for variations in values between the controlled and uncontrolled correlations greater than 20%, following the recommendation by Podsakoff, MacKenzie, Lee, and Podsakoff (2003), as none were found, we considered the model apt to perform the hypothesis tests.

4.1. Direct Hypotheses

To verify the direct hypotheses, multiple regression tests were performed for the model proposed in Figure 1. The multiple regressions were performed with the support of the smart PLS software (H1a, H2a, H2b, H3a, H3b, H4a, and H4b), and SPSS v22.1 tested the hypotheses of mediation in the macro *PROCESS® 4* (H2c, H3c, and H4c).

The model confirmed the statistically significant relationship between the variables of formation of the EI construct, of which self-awareness had a strength of 0.5971 (Γ=0.5971, t=13.218, p<0.05), self-management had the strength of 0.801 (Γ=0.801, t=27.278, p<0.05), social awareness presented a strength of 0.7213 (Γ=0.7213, t=19.864, p<0.05), and social skills presented a force of 0.9034 (Γ=0.9034, t=67.984, p<0.05). Thus, the greatest strength in social skills is theoretically based, as Salowey and Mayer (1990) describe social skills as the most impactful skills of EI.

Hypothesis H1 deals with the influence of EI in PS since this research is presented a positive correlation, with a strength of 0.2768 (H1: Γ=0.2768, t=5.376, p<0.05). Consequently, we can infer that the higher the project team's EI, the greater the probability of success. This result is in line with the work of Clarke (2010b); Rezvani et al. (2018) and Maqbool et al. (2017). Results are observed in Table 2, with all relationships and hypotheses supported.

Table 2. Direct hypotheses.

Hypotheses	Γ	Mean	sd	t-tests	*p-valor*	Status
H1: EI → PS	0.276	0.274	0.051	5.376	0.001	Supported
H2: EI → RCM	0.510	0.515	0.047	10.809	0.001	Supported
H2b: RCM → PS	0.420	0.425	0.067	6.238	0.001	Supported
H3: EI → CM	0.464	0.460	0.055	8.339	0.001	Supported
H3b: CM → PS	0.184	0.179	0.065	2.808	0.005	Supported
H4: EI → TB	0.424	0.429	0.055	7.719	0.001	Supported
H4b: TB → PS	0.117	0.118	0.049	2.388	0.018	Supported
EI → EIC	0.597	0.599	0.045	13.218	0.001	-
EI → EIG	0.800	0.798	0.029	27.278	0.001	-
EI → EIR	0.903	0.903	0.013	67.984	0.001	-
EI → EIEIS	0.721	0.721	0.036	19.864	0.001	-

When we evaluate the H2a hypothesis, we look for a correlation between EI and RCM as a result demonstrates a positive correlation (H2a: Γ=0.5101, t=10.81, p<0.05). Therefore, the hypothesis was considered valid. In this same construct, we have the H2b hypothesis. With it, we seek to assess how strong RCM impacts PS. The results showed a positive correlation (H2b: Γ=0.4205, t=6.2388, p<0.05), also validating the hypothesis. It is noteworthy that similar results were found in previous research, both for EI (Maqbool et al., 2017; Rezvani et al., 2018; Rezvani & Khosravi, 2019) and the impact of relationship conflicts on PS (Jiang, Lu, & Le, 2016; Lau & Rowlinson, 2011). With the data collected in this research, we can reinforce the concept that, in the presence of a high EI in the project team, relationship conflicts are better managed, ensuring more balanced teams, which is reflected in an increase in the probability of PS.

Continuing with the assessments, we have hypothesis H3a, which seeks to assess the correlation between EI and CM. With the strength of 0.4644 (H3a: Γ=04644, t=8.3394, p<0.05), we see a positive correlation between EI and CM. Hypothesis H3b brings a correlation strength of 0.1844 (H3b: Γ=0.1844, t=2.8087, p<0.05) between CM and PS, a result also predicted by previous works, such as those of Aaltonen and Kujala (2010); Ehrhardt et al. (2014); Keung and Shen (2013); Lumseyfai (2020) and Thamhain (2013).

The confirmation of hypotheses H3a and H3b allows us to infer that teams that score higher EI values better manage communications, valuing more communication channels and better identifying the communication needs of their team members so that more effective communication reflects on the PS. The model also confirmed the H4a hypothesis, with a strength of 0.4248 (H4a: Γ=0.4248, t=7.7197, p<0.05), referring to the correlation between EI and TB.

Therefore, project teams scoring higher on the Goleman scale (Boyatzis et al., 2000) in EI score higher on the Cook and Wall (1980) trust-building scale. This correlation was predicted in Druskat and Druskat (2006) and was also confirmed by Kermanshachi and Safapour (2019). Finally, we confirm hypothesis H4b (H4b: Γ=0.1177, t=2.3838, p<0.05). This hypothesis evaluated the correlation between TB and PS since the H4b had a strength of 11.77%). In line with Troth et al. (2012) and Rezvani et al. (2018) identified that trust within project teams reduces barriers and creates shortcuts to relationships and creativity, in addition to increasing the probability of PS.

4.2. Mediation Hypotheses

As H1 was confirmed, while also confirming the other direct hypotheses (H2a, H2b, H3a, H3b, H4a, and H4b), the model data were used for an analysis using the PROCESS® macro in SPSS to evaluate the H2c hypotheses, H3c, and H4c, which indicate the possibility of partial mediation of EI by the other constructs evaluated: TB, RCM, and CM. With the data previously loaded into SPSS, we activated the PROCESS® macro, listing the scales involved in the measurement processes. One mediation model was run at a time, representing H2c, H3c, and H4c. The output considered was the PS independent variable; a summary of the results is presented in Table 3.

Table-3. Summary of mediation results.

Hypotheses	Effect	F-test	R^2	LIIC	LSIC	Status
H2C	0.409	250.43	0.644	0.307	0.508	Supported
H3C	0.100	115.124	0.454	0.049	0.164	Supported
H4C	0.204	131.765	0.488	0.128	0.297	Supported

Note: LIIC = lower limit of the confidence interval; LSIC = upper limit of the confidence interval.

The H2c hypothesis is confirmed (effect =0.409; CI [0.307; 0.508]). Therefore, part of the effects we see between EI and PS can be explained by EI's effect on RCM, with the strength of this indirect effect being 40.9% H2c. The partial measurement effect was expected, as, with the reduction of relationship conflicts, trust and appreciation of team competencies improve (Lin et al., 2019). Teams with a lower level of relationship conflict have a greater commitment to the PS (Ehrhardt et al., 2014). We infer, therefore, that one of the ways EI affects the PS is through the reduction of relationship conflicts. When we evaluate the CM as a mediator between EI and PS, we confirm hypothesis H3c (effect =0.1; CI [0.049; 0.164]).

The positive influence of EI in PS is partially explained by understanding that the project manager's communication skills must be developed to meet stakeholders' perspectives (Carvalho & Rabechini Jr, 2015). The positive influence of H3c mediation has an indirect effect of 10%, as it can be explained by the way emotionally competent leaders can manage positive and negative emotions, encourage the expression of new ideas, as well as establish an optimistic tone to communication (Gardner & Stough, 2002).

This optimistic tone can influence classic control functions, such as coordination, communication, and performance standards (Bredin & Söderlund, 2013). Finally, we confirm the H4c (effect =0.204; CI [0.128; 0.297]), which deals with the mediation hypothesis between EI and TB to influence the PS. Thus, we can infer that part of

the effect of direct EI hypotheses in the PS can be explained by mediation in TB. Once again, the results found are in line with theory, as teams that maintain good relationships avoid blocking communication and creativity (Troth et al., 2012). Furthermore, trust makes stakeholders value the project result, increasing their consideration for the outcome and even creating a sense of pride in their participation, which, as a consequence, favors the project's success (Eskerod, Ang, & Andersen, 2018).

4.3. Project Managers' Emotional Profiles and their Impacts

Emotional issues are relevant in project management, given the breadth of personal relationships managed to achieve the objectives of a project. We expect that there will be variations in the elements that make up the project managers' EI, leading to varied decision-making and, therefore, different results in the projects. Even if it is evaluated homogeneously, there is heterogeneity in the individuals' EI levels through average scores. To achieve these classifications, the adjustment of the sample in this study to several unobservable classes was initially evaluated. The adjustment indicators of the proposed classes are observed in Table 4.

Table-4. Adjustment indicators of proposed classes.

Indicators	Class 1	Class 2	Class 3	Class 4	Class 5
Number of complete cases	280.000	280.000	280.000	280.000	280.000
Number of estimated parameters	72.000	145.000	218.000	291.000	364.000
Residual Density Function	208.000	135.000	62.000	-11.000	-84.000
Maximum Log-Likelihood	-4,215.078	-3,863.297	-3704.541	-3641.267	-3588.913
AIC(1)	8,574.156	8,016.593	7,845.081	7,864.535	7,905.825
BIC(1)	8,835.861	8,543.638	8,637.465	8,922.259	9,228.889
LR/Deviance (1)	5,362.234	4,658.671	4,341.159	4,214.613	4,109.903

Note: $\chi 2$>10,000; Iterations above 10.

These results suggest an adjustment between 2 and 3 classes, where the inflection point of the AIC (Akaike Information Criterion) and BIC (Bayesian Information Criterion) indicators occurs. These indicators must be evaluated for their magnitude. The smaller, the better, as these criteria point to a comparison between possible models and suggest the amount of information lost to compose a possible solution. AIC is a measure that allows us to infer how much the sample fits the data and may predict results, supported by the decrease in other adjustment indicators. To confirm the indication of the ideal class, an inflection graph was performed with the AIC and BIC, as shown in Figure 2.

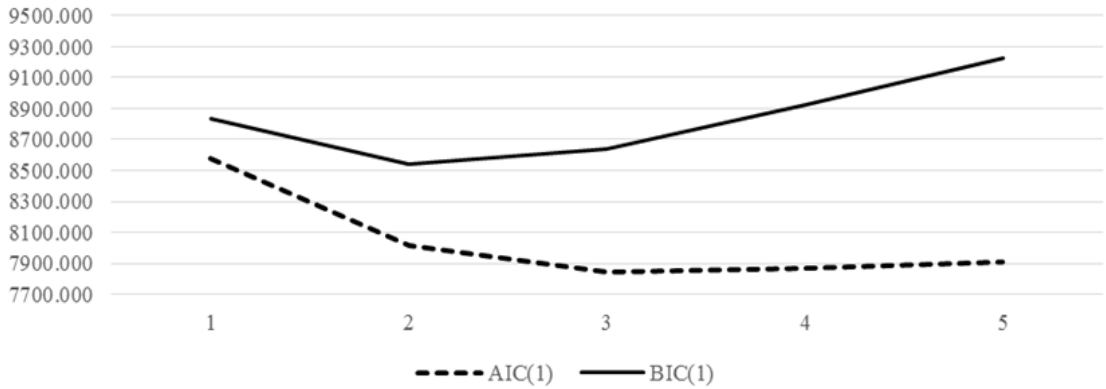

Figure-2. AIC and BIC inflection graph.

Based on this analysis, we opted for a 3-class solution, where we can observe the joint inflection of the indicators, suggesting the best solution for classifying heterogeneous groups in the sample. From this option for three classes, the indications of agreement of respondents to each item of the EI scale were computed, as shown in Table 5.

Table-5. Agreement of respondents with EI items by class.

Classes	Self-knowledge				Emotional trading							
	EI1C	EI2C	EI3G	EI5G	EI6G	EI1S	EI2S	EI2R	EI3R	EI4R	EI5R	EI6R
Class 1	0.936	0.927	1.000	1.000	1.000	0.962	0.986	1.000	0.928	0.989	0.989	0.991
Class 2	0.945	0.929	0.993	1.000	1.000	0.941	0.927	0.938	0.844	0.946	0.952	0.979
Class 3	0.721	0.749	0.864	0.887	0.819	0.593	0.549	0.663	0.375	0.751	0.571	0.839

These three classes were called EI (class 1, n = 88), as they have high scores in all dimensions, prone to EI (class 2, n = 148), with high levels of emotional self-knowledge (EI1C to EI5G), with lower emotional management indicators (EI6G to EI6R), and Reluctant who do not trade (class 3, n = 44), as they have lower emotional self-awareness indicators, and even lower emotional management indicators.

Table-6. Multiple comparisons between constructs versus classes.

Construct	Class	N	Average	dp	*t* teste	sig
Relationship Conflict	Emotional Intelligence	88	6.284	0.782	8.610	0.001
Management	Reluctant	44	4.968	0.850		
Trust Building	Emotional Intelligence	88	6.030	0.977	6.419	0.001
	Reluctant	44	4.932	0.900		
Communication management	Emotional Intelligence	88	5.894	1.183	4.760	0.001
	Reluctant	44	4.977	0.966		
Project Success	Emotional Intelligence	88	6.455	0.583	10.173	0.001
	Reluctant	44	4.996	0.857		

Note: *dp = standard deviation.

For comparison purposes, we sought to assess the extremes, that is, to analyze the different impacts on the concepts in this study between the "Emotional Smart" and the "Reluctant who do not negotiate." These comparisons are shown in Table 6.

All constructs differ between the more extreme classes, Emotional Intelligence versus Reluctant. We observed that the higher the EI, the more positive are the RCM characteristics (Mclass 1 = 6.284 vs, Mclass 2=4.968, p<0.001), TB (Mclass 1 = 6.030 vs, Mclass 2=4.932, p <0.001), CM (Mclass 1 = 5.894 vs, Mclass 2=4.977, p<0.001) and PS (Mclass 1 = 6.455 vs, Mclass 2=4.996, p<0.001). Control and emotional preparation lead to better scores in aspects of conflict, relationship, and trust, allowing for better management of these aspects. The largest group is composed of individuals with intermediate levels of EI, signaling that they are the group to develop the most.

5. DISCUSSION OF RESULTS

The objective of this study was to identify how much the EI of the project team influences the PS, and the structural design was validated, achieving convergent and discriminant validity, as well as good quality of fit and reliability, allowing for the analysis of results from the adjustment of the data to the proposed model. EI is a prevalent topic in self-help literature and popular literature on leadership, and nowadays, the topic is already well established in the scientific literature. However, there is still a discussion about the validity and efficiencies of scales (Cherniss, 2010) and how much EI can be trained and developed in PMs (Clarke, 2010c).

Although the great development in the scientific literature on EI was developed during the first decade of the 2000s, there is room for further exploration. Today, the most significant opportunities are in the search for mediating and moderating variables that influence the results of project successes (Clarke, 2012). Furthermore, since there is a growing number of researches on the subject, with articles mainly in China, the Middle East, and Eastern Europe, which seek to evaluate EI no longer as an individual capacity of leadership, but in the form of an asset of the project group (Maqbool et al., 2017; Rezvani et al., 2018; Troth et al., 2012).

However, this relationship is complex and cannot be fully explained by the direct relationship (Müller & Turner, 2010a; Rezvani et al., 2016). Thus, this research is aligned with the effort to identify mediators and moderators among the skills of team members who can support project performance. Furthermore, as carried out in Brazil, it can help to broaden the cultural scope of EI and trust studies, as a cultural environment plays an influential role in building trust (Thanetsunthorn & Wuthisatian, 2019). Therefore, this research investigated how much the EI of team members influences and impacts the PS (H1), how much it impacts the leadership attributions (H2a and H3a), and how much it impacts the trust of team members with the project leadership and its results (H4a). Complementarily, we investigated whether leadership attributions (H2b and H3b) and group trust (H4b) effectively impact the project's success in the sample.

Initially considering the general and specific objectives of this study, it is clear that all were met. The EI of the project team positively influences the project outcome. The value of the strength of the correlation found was 0.274. This value is very similar to the value of 0.285 that Maqbool et al. (2017) found in their research, with similar scales. However, more than evaluating the PM's EI, we sought the EI of all members, as the emotional skills of the team members encourage a positive emotional tone that promotes a constructive environment for individuals to operate (Troth et al., 2012), where teams with high EI levels are more likely to regulate their emotions to work toward an outcome (Rezvani et al., 2018).

Additionally, even when conflicts arise, EI allows project teams to understand and manage their feelings and the emotions of other team members, controlling their negative impacts (Rezvani & Khosravi, 2019). This confirms hypothesis H2a that the EI of the project team also positively influences the leader's behavior in relational conflict management. Although relationship conflict management is an attribution of leadership, the possibility of greater decentralization of conflict management responsibilities with other project members who have high EI rates can reinforce this path (Matinheikki, Artto, Peltokorpi, & Rajala, 2016).

We must also consider that, in a project group, with limited time and budget, conflicts are unavoidable (Pryke & Smyth, 2006) and, to some extent, even desirable, as the productive conflict collaborates with the creation of new ideas and creates new paths for the PS (Wu et al., 2019). In this way, EI helps to isolate productive, task-focused conflict from unproductive, relationship-focused conflict (Dasgupta, 2019), translating into project performance, which is in line with the confirmation of H2b. Also, in the research by Wu, Zhao, Zuo, and Zillante (2018), the effect of relationship conflict had the highest correlation and was negatively related to PS.

Another direct hypothesis that has been confirmed is H3a. The results showed that EI positively influences the leader in CM. This finding was in line with Jiang and Zhao (2019) when they described that frequent communication improves relationships. Formal and effective communication reduces conflict between tasks and processes. Therefore, a high frequency of formal communication is positively associated with relationship conflict. Informal communications positively influence the process and task conflict and negatively influence relationship conflict (Wu et al., 2017). Structured communication can reduce the damage of environmental uncertainty to cooperation (Wang et al., 2019). Nevertheless, communication forms the bridge to daily exchanges of information because working members need to trust what has been provided (Wong et al., 2008).

At this point, we emphasize the confirmation of hypothesis H3b, which confirmed, in the sample, the positive influence of CM in PS. Finally, the confirmation of hypothesis H4a allows us to affirm, within this sample, that EI facilitates the TB among team members. It was argued that to establish trust, emotional bonding is necessary. This link links EI and PS. Consequently, emotionally intelligent project managers build trust through an emotional bond with their team (Rezvani et al., 2016). This relationship is reflected in the PS.

Trust between team members reduces the need for control (Jiang & Lu, 2017). As a result, it plays a crucial role in conserving project costs and streamlining decision-making (Li, Yin, Chong, & Shi, 2018). For this reason, the results of the H4b hypothesis also support this understanding. With the validation of the mediation hypotheses as well, we can state that, in the sample of this research, part of the positive influence that EI has on PS can be

explained by the influence that EI has in managing relationship conflicts (H2c), in communication management (H3c) and in establishing trust (H4c). Due to the complexity of the relationship between EI and PS, identifying management actions that are critical success factors for project management and that still mediate this relationship helps explain its complexity. As a result, it is possible to create monitorable elements and actions from the project teams that demonstrate EI and thus practically monitor the probability of PS.

In the additional tests, we identified that the hypotheses validations did not change with project-based and project-oriented companies, demonstrating that the concept of EI as a promoter of PS has similar validity in both business models. No other surveys that made a similar comparison were identified. Furthermore, different EI profiles were also identified in the sample, suggesting that this aspect is heterogeneous in individuals, even if this characteristic is treated uniquely in individuals. The results also show statistically significant differences between emotionally more competent groups *versus* groups with this more reluctant trait. The greater the EI in individuals, the better their conflict management skills, relationships, trust skills, and perception of PS. This supports the accumulation of evidence on the relevance of seeking to develop EI in project teams.

6. CONCLUSIONS AND IMPLICATIONS

This study aimed to assess the influence of EI on the PS. For this relationship, the study concluded that EI directly impacts PS. According to Cohen's f2, it can be measured directly and consistently within project teams to create balanced teams. However, EI also directly impacts the executive actions of project management. RCM (H2a), CM (H3a), and TB (H4a) were evaluated in this research. This direct action has been extensively reported in theory and other research (Clarke, 2010b; Clarke, 2010c; Clarke, 2012; Druskat & Druskat, 2006; Maqbool et al., 2017; Troth et al., 2012; Turner & Müller, 2005).

The research confirmed that the evaluated constructs directly impact the PS (RCM - H2b, CM - H3a, and TB - H4a). Furthermore, with the confirmation that EI directly impacts all, a mediating effect was evaluated and confirmed between the constructs RCM (H2c), CM (H3c), and TB (H4c). We understand that this mediating effect is the main theoretical contribution we found in this research, as it responds to the call for research by Clarke (2012) and joins the efforts of researchers (Clarke, 2010b; Maqbool et al., 2017; Rezvani et al., 2016; Rezvani et al., 2018), in order to identify mediators and moderators of this complex relationship that is EI and PS.

As a contribution to practitioners, initially, we can highlight the validation of H1 with a correlation strength of 27.68%, showing that a higher EI of the team will directly increase the probability of PS. Consequently, practitioners in a leadership position should consider creating an EI inventory of project management professionals, as it is a measurable characteristic that can be collected at the time of hiring or even systematically reassessed. In addition, it contributes to the definition of teams. We reinforce that EI should not be understood as a solitary cutout in hiring but as an additional item that seeks to inventory non-technical capabilities in project and people management (Clarke, 2010c). Because of this, other assessments that are used today, such as school history assessments, previous professional experiences, or even the application of technical tests, should continue. The study identified three distinct and unobservable classes that vary in EI, with different impacts on conflict management, relationships, communication, and PS. For organizations, this suggests that EI should be treated as a distinct trait in itself and should not be assumed to be unique across teams.

The study confirmed data from previous researches and contributed to the identification of mediators between EI and PS. However, the study has some limitations. One limitation is related to the response bias present in the self-assessment scales. We tried to minimize the bias by maintaining anonymity, the randomness of statements and applying the "proxy subject" technique, in which we included the responses of other participants evaluating the projects. Another limitation is due to the wide range of projects within the study. The complexity of a project can act as an influencing factor and was not controlled in the study. As a suggestion for future studies, a comparison between regions and countries is proposed, as cultural aspects may vary, affecting the model tested in this study.

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