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## Conflict Resolution to Project Performance

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### Abstract

Conflict resolution is a key issue to manage when dealing with diverse stakeholders. By analysing in depth the most relevant and implicit aspects of the construct "conflict", this study focuses on examining how the five main strategies in solving common disagreements are adopted by considering different conflict sources. Hypotheses are tested using data collected from both the academic and business world. Perceptions of project managers and team members allows the authors not only to find significant differences by role played or type of organization, but to narrow the design of future approaches to investigate the relation between conflict and project performance. More specifically, the research indicates that project managers adopt confronting and compromising styles in most cases as first options, highlighting the influence of responsibility degree factor in how issues are undertaken within a project team.

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### 1. Introduction

Nowadays, there is a big consensus around the fact that projects have great leverage when it comes to creating and improving the processes and products that companies offer to the market. Therefore, in today's increasingly globalized world, the aforementioned setting has become even more multicultural and multidisciplinary, forcing

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Project Managers (PM) to combine and align the interests of diverse stakeholders, all while keeping in mind very different points of view and having to face conflicts with varying origins, as they focus on the daily management of the projects.

This article aims to thoroughly examine the main strategies applied when managing conflicts that may arise when dealing with internal stakeholders, which are later put into practice, depending on the source of the conflict, by Project Managers, in order to evaluate their impact on the project performance. Furthermore, we will analyze other influential factors, such as the different roles carried out: PM or team member (TM).

In order to achieve the proposed objectives, we have surveyed students studying their last year of Industrial Engineering at the ETSII-UPM, subsequently contrasting the results, using a panel of 17 Senior Project Managers who work in international consultancies, as control group, for research results.

The paper is structured in the following way. First, we present the theoretical perspective used in the paper, namely that of the organizational capabilities and the knowledge-based theory of the firm. Second, we review the literature on project competence and project capabilities. Third, we present our research methodology and discuss the design of our longitudinal case study. Fourth, we describe the four project epochs identified in the evolution of ABB (1950–2000) and then turn to a theoretical analysis. The paper ends with a summary of our findings and a discussion of their implications.

## 2. Literature review

Conflict is the result of a difference of perception, opinion or beliefs among people (PMI, 2010). Usually, conflict occurs when there are incompatible goals, thoughts or emotions among individuals, resulting in opposition and disagreements. Wall and Callister (1995) define conflicts as “.... A process in which one party perceives that its interests are being opposed or negatively affected by another party”. Ahmed (2007) states that conflict is “perceived difference between two or more parties resulting in mutual opposition”. Conflict involving the project team, as well as groups that are outside of the project, can be detrimental to project performance (Yu-Chin Liu et al., 2011). Project managers often experience interface conflicts that stem from incompatible requirements from different project stakeholders. Each group will generally present differences in attitude towards a project, and these differences will generate interface conflicts (Awakul and Ogunlana, 2002).

The project manager accomplishes project success through Project team by motivating all those involved within time, budget, and quality and to the client’s satisfaction. According to Hoffer et al. (2002) the project manager uses the required skills in leadership, management, stakeholder’s relationship and conflict management style to achieve project objectives by motivating the team to ameliorate conflict during project life cycle. The project manager should concentrate on applicable constructive conflict management style. Lee (2008), posited that conflict is part of human reciprocal activity, which require different use of conflict management styles adopted by the Project manager to maintain harmony within the organization.

Rahim and Bonoma (1979) outlined the most common five styles of dealing with conflict: confronting, dominating, compromising, accommodating and avoiding.

Khanaki and Hassanzadeh (2010) and Kuhn and Poole (2000) looked at confronting conflict management style in project management as a situation that allow conflict to be resolved between two parties that result in a win-win situation. This style involves clear and straight communication and it makes available utmost declaration. Thammavijitdej (2000) posited that confrontation has proven to be the most efficacious of all the conflict management styles since it encourages openness and a cut clear information synthesis from one party to another.

Compromising is considered to be give and take. Lee K. L. (2008) and Verma V. K. (1998) see compromising as bargaining to solve the pending conflict that satisfy both parties and always catering for unequivocal resolve. It is good to use when both parties need to win; there is a deadlock, there is not enough time, the need to maintain the relationship is crucial and there is no suitable time, in other words, both parties gain something to lose something.

Accommodating allow for the point of view of everyone and synthesizes to have an agreement and allegiance of the parties involved in conflict, which always produce a long lasting solution. Its final result is a win-win situation according to Thammavijitdej P. (2000) and the result benefits all the parties involved.

Forcing conflict management style is a condition of high concern for one's self and a low concern for others as it is an indication of establishing one's idea over others leading to a win-lose situation. This in turn encourages forcing to win at the expense of other TMs (Cheung, C., 1999; Friendman R.A. et al., 2000; Rahim M. A. 2002; Hans A. and Bariki A. S. 2012). The project manager that uses this technique will become an authoritarian or a dictator and the project will suffer the consequences.

Avoiding is the situation of conflict avoidance as they ignore it and look somewhere else whenever conflict arises. Zikmann, R. (1992) attributed conflict avoidance as a passive response to conflict in which the concern for both parties is ignored.

These same styles are being presently considered to analyze the consequences of a project manager's conflict management styles on the project team's motivation (Mumuni, 2013), confirming the most successful project conflict management styles through ranking. The ranking orders indicate that the confronting conflict management style is the most important of the five, followed by accommodating and compromising respectively, while forcing came in fourth and avoiding, fifth. This study recommends that the conflict management style adopted should be based on the nature of the contending issues; the project stakeholder's demand and the urgency to deliver the project as soon as possible.

Most research on conflict implies that its management is a process: 1) identification, 2) resolution, 3) enactment, and 4) evaluation, analyzing the impact of the conflict type on project performance. The conflict process is based on previous conditions, emotions, perceptions and behaviors. By examining conflict as a process, Iorio and Taylor (2014) developed a model to understand conflict, not only examining failures which occur within the conflict management process, but also identifying phases when conflict is successfully mediated. Different interactional patterns between distributed project TMs and boundary objects have demonstrated a reduction in conflict duration. Regardless of network diversity, networks that interacted with the boundary objects in certain ways were able to identify and resolve conflicts more quickly.

A general consensus from researchers indicates that what triggers conflict may be an internal or external change, a cause or result of communication, emotions, values, organization structure, workgroup diversity or personal experience (Desivilya and Yagil, 2005; Farmer and Roth, 1998; Fine et al., 1990; Jameson, 1999; Jones and Deckro, 1993; Jones and Melcher 1982; Tjosvold and Su, 2006; Wall and Callister, 1995).

Kaushal R. et al. (2006) explored the relationships among culture, power, personality, and styles of conflict resolution. They include in their research an overview of the hypothesized connections between cultural variables and styles of conflict resolution and between personality variables and styles of conflict resolution. Cingöz-Ulu B. and Lalonde R. N. (2007) go further exploring cultural differences in conflict management strategies within the context of same-sex friendships, opposite-sex friendship and romantic relationships. Results showed that in general, personal relationships involved a more extensive use of conflict management strategies than did opposite-sex friendships, with same-sex friendships falling in between the two.

Vaaland (2004), Billows (2006) and Hodgson (2011) demonstrated how collaboration between clients and major contractors can be improved in situations where tension challenges relationship continuation: relationship conflict is reduced through the identification of conflict events and the analysis of differences in both parties' perceptions. In this way, there are important considerations related to the identification and prioritizing of critical success factors for conflict management (Lam and Chin, 2005): 1) Relationship management (mutual understanding of organizational objectives, commitment to collaboration and trust), 2) Conflict handling system (conflict management culture, conflict handling skills, conflict handling process and conflict monitoring and improvement) 3) Project management (mutual understanding of the requirements, task allocation, product specification management and progress monitoring), and 4) Communication (communication management and information systems used).

Some authors have analyzed the contingency perspective of conflict in projects and organizations (Cameron and Whetten, 2007; De Dreu and Weingart, 2003; Mantel and Mederith, 2009), identifying that it is imperative to assess the positive and negative effects of conflict on project team success, distinguishing three basic types of conflicts: interpersonal (relationship tensions among TMs), task (when stakeholders disagree on the priority, scope, and/or requirements of a project) and process conflicts (how to execute tasks in order to accomplish project objectives).

Other authors have discussed conflict value and importance for the project showing that conflict is multi-faceted (Gardiner and Simmons, 1998; Mahalingam and Lewit, 2007; Villax and Anantatmula, 2010), analyzing the impact of conflicts (positive or negative) on the project team (and on the project performance) depending on conflict sources, and proposing specific conflict resolution strategies for each scenario.

They affirm that conflict can stimulate change, improve communication, encourage creativity and innovation and increase performance and group cohesiveness. On the other hand, conflict can increase stress, lower job satisfaction and morale and ultimately lead to project failure.

As has been exposed in the literature review, conflict management has been considered as an important competency for project managers, but any of the analyzed papers, gather up the relation between conflict source and conflict management strategy mainly adopted by practitioners, that in this case are represented by a sample of engineering students, which answers are contrasted against a control panel of senior project managers.

### **3. Methodology**

#### *3.1. Framework of the experience*

During the first semester of the 2013-2014 course year, students in their last year of various Industrial Engineering fields of study were given the opportunity to carry out a real engineering project, consisting of the planning and design of a sewage water treatment plant. The location, as well as the size of the plant, had to be backed up with a viability plan which needed the prior approval of the sponsor (professor) before properly beginning the engineering project.

The 350 students, spread out among 5 classes, were organized into teams made up of students from the 8 major fields of study offered at the ETSII-UPM (organization, automatic, electronic, energy, mechanical, construction, electric, chemistry and materials), given the fact that the Projects Course is considered to be transversal and a mandatory subject matter for all students in their last year. At the onset of the project, each team, made up of between 6-8 members, had to choose a project leader, whose mission was to ensure the success of the project (the highest grade or qualification), being the sole liaison between the team and the sponsor, assigning tasks and responsibilities to the rest of the team, and guaranteeing that the deadlines were met, all while upholding the required levels of quality.

The projects had to progress in such a way so as to coincide with the classes taught regarding the general theory of project management. The theory included scope management, timing and cost, as well as boosting the use of a series of competencies according to the ABET accreditation project in which ETSII-UPM is involved.

One thing that extremely enhanced the experience from an academic point of view was that about 35% of the students enrolled in the course were already involved in corporate internships. This gave me them a more critical and more authentic vision of project management.

During the second phase of the research, the gathered data was contrasted against a panel of 17 Senior project managers, coming from international consultancies (Accenture, Everis, Management Solutions, BCG, Indra and KPMG), who had a minimum of 6 years' experience in project management, and a maximum of up to 13 years.

#### *3.2. Data collection*

For the data collection, a weighted matrix survey was developed, including a previous set of questions that served as contextualization for all of the students. This was carried out in an anonymous fashion, with the exception of the PMs who were duly identified. With this contextualization in mind, they were asked about their role, their team, their gender, if the idea of conflicts was something negative or positive in their minds, and about the moment that the conflicts arose.

The matrix consisted of 12 rows in which different conflict sources were proposed (Table 1), all taken from the literature (Villax and Anantatmula, 2010).

Table 1. Sources of conflict.

Source	Related with
People -focused	Incompatible values and needs, and differences in personalities.
Unresolved Prior conflict	Unresolved prior conflicts
Issue focused, task issues	Objectives and performance requirements of the project
Goals and priorities	Diverging goals and priorities
Authority based	Not clear authority defined
Administrative/behaviour regulations	Organization management structure
Role incompatibility	Perception that an individual assigned role is incompatible
Organization differentiation	Different individuals perceiving the same thing differently
Task interdependency	Dependency between others to complete one's work
Communication and information deficiencies	Poor and ineffective communication
Culture	Different cultural values and norms
Environmentally reduced stress	High levels of stress as well as unresolved and mounting interpersonal tensions due to high uncertainty

The rows were crossed by 20 columns where four gradual alternatives were disaggregated, applying each one of the five strategies (Table 2) put forward regarding conflict management proposed on the literature.

Table 2. Conflict management strategies.

Conflict management strategy
Avoiding
Accommodating
Compromising
Forcing
Confronting

All data was gathered between June 2013 and March 2014.

### 3.3. Data analysis

In the first phase, we screened the incomplete surveys, given the fact that the format that we needed to carry them out in had to be on paper. That left us with a total sample of 275 students and 17 professionals. After gathering and standardizing the data, we thoroughly collated said data applying descriptive statistics, not only aggregate (strategies and sources) but also disaggregate (roles and first choice).

Afterwards, in order to assess the possible existence of data dependency among the statistics, a contrast of the following hypotheses was carried out:

- $H_0^I$ : The conflict management strategy choice is unrelated to the role.
- $H_0^{II}$ : The conflict management strategy choice is unrelated to the conflict source.

After this, a contrast was conducted between students and a control group of PMs professionals, to obtain independent assessments that reinforce the conclusions.

And lastly, a multiple regression analysis was carried out in order to determine the possible relationship between the different conflict management strategies and the success of the project. However, it was concluded that an irrefutable result could not be attained (the adjusted R-square indicator), partly due to the weight of subjectivity that the mark suggests.

## 4. Results and discussions

In the student sample, after analyzing the main strategies adopted by the TMs compared to those adopted by the PMs (Figure 1), a clear difference in focus is observed. Where major differences are detected are on the forcing strategy which suppose an 11.43% of PMs response and 7.62% of TMs. Even though for the rest of the conflict resolution management strategies differences extracted from the statistical analysis are not significant, a clear difference of conflict management strategy selection is detected, that can be confirmed by posing and ruling out the hypothesis  $H_0^1$ , with a likelihood ratio of 136,8 ( $\alpha = 0,05$ ). After corroborating this, the university sample was screened even further, reducing it to solely the 41 PMs, thus guaranteeing a better contrast of the results compared to the professional sample.

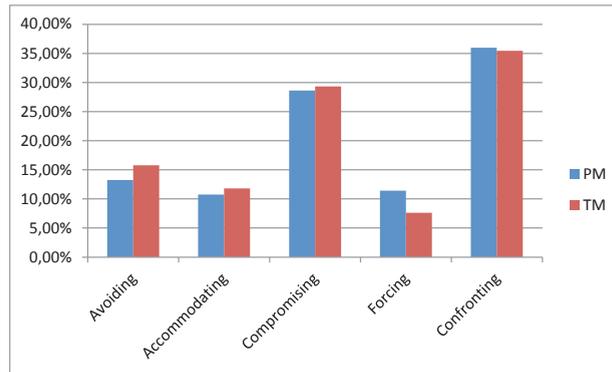


Fig. 1. PM vs TM.

Now, dealing solely with the PM sample (removing TMs responses), the  $H_0^II$  is assessed for the student sample, and contrasted against a control group of professionals. In this way, the hypothesis, is ruled out in both cases with a likelihood ratio of 836,01 ( $\alpha = 0,05$ ), therefore confirming the dependency of the interdependence of the conflict source when selecting the management strategy.

The comparison among these conflict management strategies of the aggregate data for PMs (Figure 2) show a clear tendency on behalf of the students towards confronting (36%) and compromising (28,61%) strategies, similar to the professionals (40,98% for confronting and 28,46% for compromising), with two details that stand out: the professionals exhibit a noticeable tendency in their strategies, and they opt for, as a third option, the accommodating management style (16,21%), whilst the students leave this option as the last possible alternative (10,71%). Forcing strategies are rated in a very poor way by professionals (8.01%) and something better by students (11.43%). The same occur for Avoiding strategy (13.24% ETSII-UPM and 6.34% for companies).

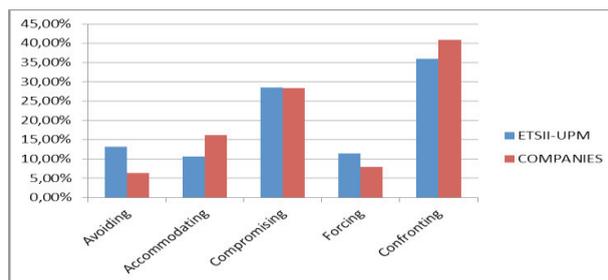


Fig. 2. Aggregate Strategies.

After studying the data in a disaggregate way (Figure 3), a variance in the chosen strategies was detected, depending on the conflict source, just as the hypothesis contrast had previously confirmed.

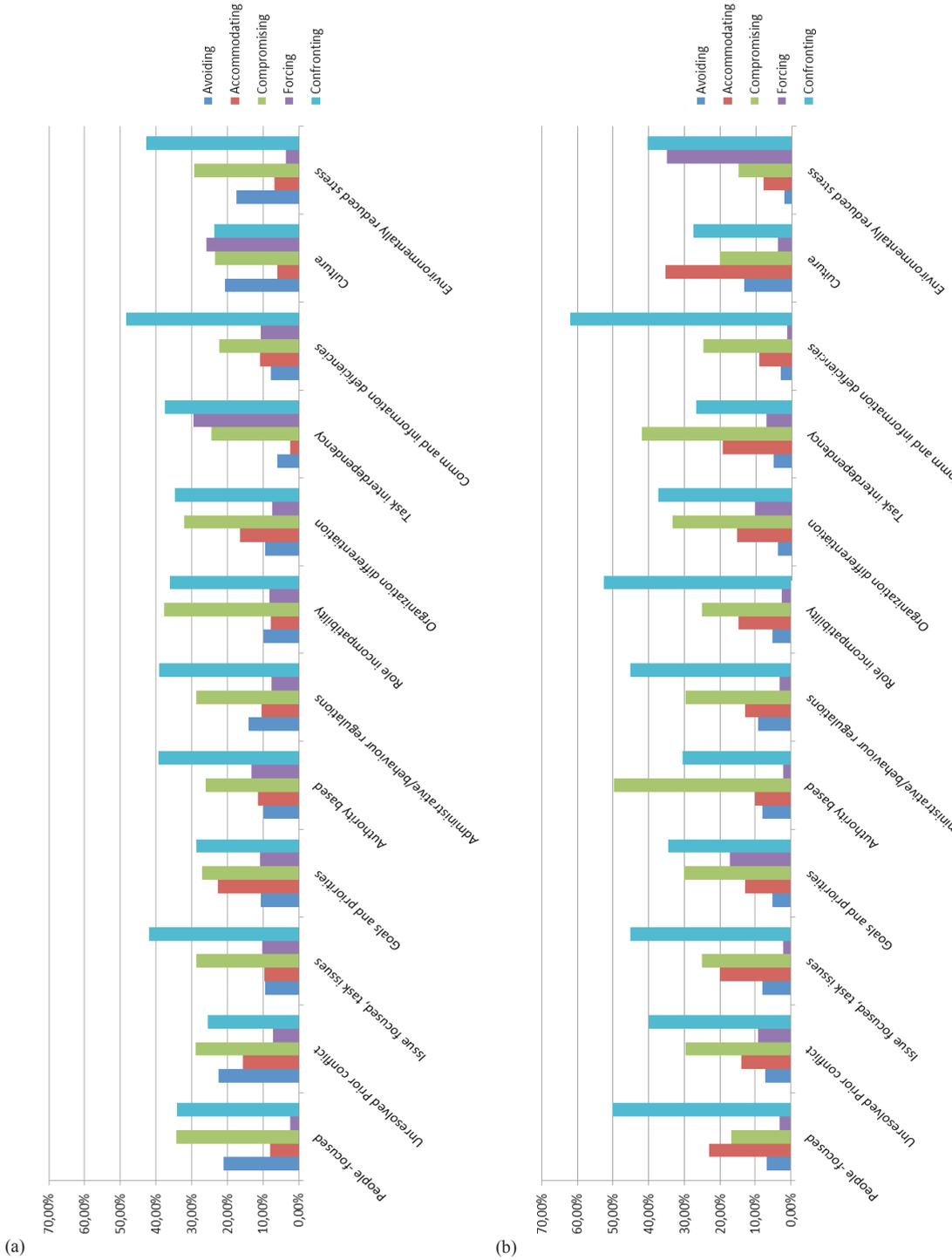


Fig. 3. (a) ETS, II-UP, M Disaggregate Strategies; (b) Companies Disaggregate Strategies.

Comparing these results in a disaggregate way according to their conflict sources, we can come up with the following conclusions:

In conflicts in which the source is focused on the person, the interpersonal, or on relation relational themes, the professionals much more clearly opt (50.20% compared to 34.15% of the students) for settling the conflict looking for the strategy which a priori, according to literature, gives a clearer win-win situation (confrontation) compared to the students. In this way, strategies that suggest avoidance of the problem are abstained from (6.67% for PM companies and 21.14% for students), due to the fact that, just as the related literature regarding interpersonal conflicts shows, these usually have a negative impact most of the time.

Facing conflicts arising from previous projects, the focus is clearly differentiated. This is easily attributable to the fact that the students, even after having worked together for years, normally choose colleagues with whom they have experienced few conflicts, and in the case that said conflicts exist, they are able to dodge them so that there is no impact on the project performance, opting more for a compromising conflict management style (28,94%). Whereas, in consultancies, the resources are often assigned based on previous planning which doesn't necessarily take into consideration previous experiences, being chosen as the priority strategy Confronting (40%). In this case, the forcing strategy is chosen few times by the two groups (7.32% and 9.02 PM Students ETSII Company)

On the other hand, when the origin originates in the prioritizing of objectives, a noticeable difference isn't observed in the first strategy choices. However, the fact that the last strategy chosen by the professionals is avoiding is, in fact, notable (5,10%). Due to this, the forcing strategy (17,25%) takes the third place, which could be related to the responsibilities that are taken on by the role by those surveyed in a professional field. In the students group, these strategies are also the least valued (10.57% of avoiding and 10.89% of forcing)

The first strategy that was chosen by the panel of professionals to resolve conflicts originating from authority is compromising (49,80%), and after digging deeper into their motives for choosing this strategy, the professionals' answers were based on the fact that the majority of them work in vertical hierarchical organizations.

The existence of different points of view in the academic field as a conflict cause was put forth in a similar way, differing in that the last option for the students (9,92%) in this case was ignoring the conflict, while the professionals decided that the worst strategy to take up facing this type of conflict is once again forcing (1,96%).

Once more, in questions related to interdependence among tasks, the duo "confronting and compromising" is repeated with a different order according to the sample panel, and with a difference of opinion in that the strategy with the least value in the case of the students is accommodating (6,03%), while the professionals dismiss avoiding (5,1%). The explanation can be found by heeding the professionals' assessment that this type of conflicts can affect the expectations of the stakeholders' management to a great extent, thus rejecting any other alternative that can be taken as ignoring the conflict.

Culture is often a principal source of conflict in today's context of international projects, and while certain "ground rules" are normally established, there are still many conflicts that arise due to this point. That said, due to the considerable discrepancy between the academic origin results and the professional origin results (Forcing vs. Accommodating), we are able to deduce that this is because of the fact that our students have not yet had to contend with great cultural problems, while all of the surveyed professionals work in completely globalized environments. So for students the least valued strategy is accommodating (6.02%) and the most valued is forcing (25.92%). But for the professionals the most valued is accommodating (35.29%) and the least valued is forcing (3.92%).

The obtained results from the professional PMs, related to environmentally reduced stress, give us an idea of the utmost importance of time management in current companies. Only in this way can we understand the choice of forcing (34,9%) as a second-place option, which is so unusual and unadvisable in literature.

## 5. Conclusions

Even though there is extensive literature related to conflict management, it is very limited if we look for field investigation that back up this idea beyond a theoretic level.

The conclusions that can be obtained from this investigation are many. On one hand, it has been notably detected that there are clearly differentiated focuses, both in academic and professional fields, on managing conflicts among the internal stakeholders in a project, depending on the originating cause of the conflict.

On the other hand, that the role and the assigned responsibilities within a project have a direct influence on the way that the conflicts are tackled, while being independent of the origin of said conflict.

This study has implications for training of future project managers, and as professors of project management courses, we have been made aware of the importance of implementing an additional component in the teaching plan, specifically oriented to help lead the students to have a better understanding of the different conflict management strategies, as well as their causing sources. Also will be interesting the inclusion of the professional point of view, especially in each conflict sources in which professional's strategic selection differs from students, because there could be the experience learning.

After having obtained the results from this study, we believe that there are several research lines related with conflict management, that can still be studied, one of the most important being the analysis of the impact that the choice of every strategy has on the management of the expectations and the engagement of the project stakeholders.

A separate line, indirectly related to the previous one, would be the search for a more direct correlation between the project's performance and the different strategies that have been adopted. Taking into consideration the experience accumulated in the present investigation, we consider it to be important to obtain a more objective measurement of project performance in future research.

Another possibility would be to analyze the impact of the different conflict sources, in order to weigh the importance of each type of management, regardless of the project, thus being able to concentrate the training and efforts of the PMs on those strategies that have a greater effect on the conflicts of greater impact.

And lastly, we believe that due to the fact that the analysis has been contrasted only with a control group of professionals and coming only from the consultancy sector, it could be interesting to broaden the results with a comparative from different sectors, and a bigger sample to have not a control group but significant data for professional field.

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