

Chapter 262

Strategic management of space sector stakeholders

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ABSTRACT

This article aims to analyze the power of stakeholders in the strategic management of companies in the space sector, for which 6 companies were analyzed. Initially, the identification of its stakeholders was carried out based on the (Mitchell, Wood, and Agle 1997) methodology, which considers the ownership or the attributed ownership of one, two, or the three attributes: power, legitimacy, and urgency, to define the class to which the stakeholder belongs. The combination of the attributes allowed us to know

seven types of stakeholders. The results were obtained through case-by-case analysis and comparison of cases between them. The analyzed data reveal the managers' perception of the importance and influence of stakeholders for the organization, in addition to showing us that these two factors are closely linked to an organization's stakeholders, and their ability to handle restrictions and requirements to be placed in practice in strategic management.

Keywords: Strategic management, Stakeholder analysis, Space sector, Projects.

1 INTRODUCTION

A stakeholder can be defined as "an individual, group or organization that may affect, be affected or feel affected by a decision, activity or outcome of a project." (PMI 2017). In other words, stakeholders are people who have an interest in a management organization or a project carried out by that organization.

Stakeholders can be considered as members of the project development team, sponsors, suppliers, company owners, external public (clients), and other stakeholders, depending on the type of project in question.

Within an organization regarding its management or strategic planning, stakeholders have great potential for influence, both internal and external stakeholders. Their influence can be seen as power, this power can be formal, economic, and political (Rocha and Goldschmidt 2010).

For an understanding of the power of stakeholders in the strategic management of the organization, it is essential to understand the type of influence they have in addition to the way the organization proceeds with their interventions (Pinto and Oliveira 2004). For (Bourne and Walker 2005), one way to understand the power of stakeholders is the mapping of stakeholders according to their influences through the use of tools that contribute to the acquisition of their characteristics and interests, so that their influence can be seen later, and thus enable the alignment of stakeholders with the company's business strategy.

Knowing the degree of stakeholder influence in strategic management and consequently in the decision-making of organizations becomes important because they are key parts of the organization. The mentioned factors contribute to the importance of conducting studies that help to better understand how to empower stakeholders in strategic management in companies operating in the Brazilian space sector.

2 THEORETICAL FOUNDATION AND METHODOLOGICAL PROCEDURES

Theoretical Rationale

Stakeholder theory

A fundamental assumption of stakeholder theory is that it is based on four fundamental sciences: sociology, economics, politics, and ethics, (Freeman 2010), (Mainardes et al. 2011). Where these four sciences are closely linked to stakeholder actions and how they deal with their yearnings, propensities, interests, and preferences.

For (Laplume, Sonpar, and Litz 2008), stakeholder theory is timely and important, but still young and controversial. It is timely due to the emergence of formal organizations, increasing reports of their ethical misconduct; young because empirical validity has yet to be established in several of its major propositions; It is controversial because it associates with and resembles themes and is important because it seeks to address the often-overlooked sociological question of how organizations affect society.

Power of stakeholders

In organizations, stakeholders have roles that directly affect them and so should always be taken into consideration. These have the power to approve goals and objectives, deciding the future of a schedule defined by the organization, thus the stakeholders are directly or indirectly linked to the organization's results in question (Heldman 2017).

For (Freeman 2010), the power of stakeholders is derived from their ability to use resources to achieve a given objective, which is derived from economic power, voting power, and political power. These resources have the power to maximize the organization's ability to achieve its value-creation goals, implying a strong stakeholder liaison with the organization.

The need to understand the role of stakeholders, their connection with the organization, and their power come from their identification, where knowing their propensities, interests, and preferences becomes extremely important, (Mitchell et al. 1997; Wood 1990).

For (Mitchell et al. 1997), the understanding of the power of stakeholders are initially identified, where they must be identified based on the possession or possession attributed to one or the combination of the "power, legitimacy and urgency".

Following this definition, several stakeholder classes can be identified based on the ownership or assigned ownership, of one, two, or all three attributes (Mitchell et al. 1997).

In this approach, the first step is to define the types of stakeholders derived from the attributes: power, legitimacy, and urgency. Where relationships of these attributes with stakeholders can be seen in Frame 1.

Tables and Frames

Frame1. Stakeholder attribute types

Attribute	Importance of factors for stakeholders
Power	Stakeholder power over the organization can be coercive (through force or threat, normative through legislation and media, or utilitarian, holds resources or information used to enforce its will)
Legitimacy	Perception is based on norms, and values in the sense that certain individuals or groups have legitimate rights to perform their actions or influence others.
Urgency	Action with an urgent need is linked to the response time that the organization will give to stakeholder requests promoting access to decision-making channels.

Source: Elaborated by (Author, 2020).

From this definition, the authors identified seven types of stakeholders, indicating that entities that did not possess any of the three attributes would not be considered stakeholders and, therefore, would not have relevance in the organization's management (Lyra, Gomes, and Jacovine 2009). (Mitchell et al. 1997) discriminates seven types of stakeholders that are classified according to Frame 2.

Frame 2. Characteristics of stakeholders

Type	Stakeholder Characteristics
<i>Dormant</i>	He is the one who has the power to impose his will on the organization but has no legitimacy or urgency, and thus his power is disused, having little or no interaction with the company. However, management must know this stakeholder to monitor its potential to achieve a second attribute.
<i>Discretionary</i>	He is the one who has legitimacy but has no power to influence the company or claim urgency. The attention that should be given to this stakeholder concerns corporate social responsibility, as they tend to be more receptive.
<i>Demanding</i>	When the only relevant attribute of the stakeholder-manager relationship is urgency, the stakeholder is described as "demanding." It has no power and legitimacy but should be monitored for the potential for a second attribute.
<i>Dominant</i>	It has its influence and attention from the company guaranteed since it has power and legitimacy.
<i>Dangerous</i>	It is literally "dangerous" for the company, it has power and urgency, but there is no legitimacy. This stakeholder is coercive, coercive power often accompanying illegitimate status.
<i>Dependent</i>	It has urgent and legitimate claims, but it depends on the power of another Stakeholder to obtain the power necessary to carry out its will.
<i>Definitive</i>	It has power and legitimacy it is practically already definitive. When in addition it claims urgency, managers should immediately give attention and priority to the stakeholder claim.

Source: Elaborated by (Author, 2020).

Strategic management in the space sector

Successful ventures depend on the participation of all stakeholders, they have distinct interests in the organization's objectives and projects, and planning and managing these interests are of great importance to the organization as they support actions such as strategic planning consisting of a strategy that encompasses the company as a whole, because of its internal and external environment, to identify its

strengths and weaknesses on the one hand, and on the other, to identify threats and opportunities (Oliveira 2002; Teixeira and Alonso 2014).

Space sector organizations adopt strategic planning focusing on partnerships with different and potential stakeholders, for example, we have NASA with its strategic planning document focusing on numerous partnerships with the most diverse stakeholders, examples include partnerships to support missions and programs with the US industry and commercial space sector to reduce launch costs, leading to more opportunities for commercial space flights, as well as cooperation with the US Federal Aviation Administration (FAA) (NASA 2018).

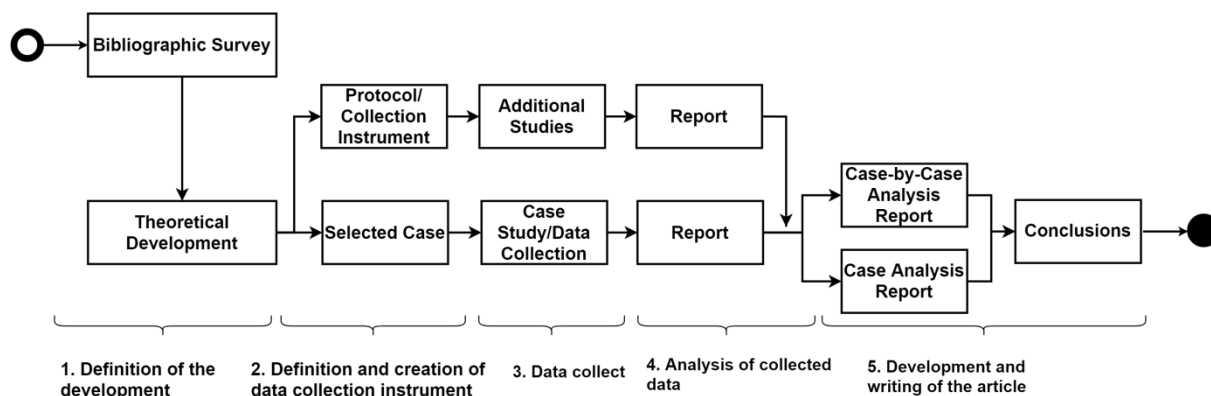
Partnerships and potential stakeholders are evaluated at NASA centers, mission boards, and other stakeholders before final agreements are reached to ensure alignment with NASA's mission.

To this end, NASA implements management tools such as the planning, scheduling, budgeting, and execution process to ensure the receipt of organizational value and alignment of its partnership activities with its strategic goals and objectives (NASA 2018).

Methodological Procedures

This study was designed to understand five steps: definition of the research problem; definition and creation of the data collection instrument; data collection; analysis of collected data; article development and writing, illustrated by Figure 1;

Figure 1. Research methodology. Prepared by (Author, 2020).



Regarding the research problem, it was elaborated through the bibliographical revision of the themes that evidence this study. The bibliographic research was based on materials elaborated on the subject, together with a qualitative and quantitative research methodology.

Qualitative, because the work in question enters the subjective part of the problem, identifying it and subsequently making the analysis of data unable to measure numerically (Marconi and Lakatos 2017; Yin 2015).

Regarding quantitative research, the use of the quantitative method occurred at different times, as it became necessary to seek results that could be quantified by collecting data with formal and structured instruments in a more organized and intuitive manner (Yin 2015).

In addition to the qualitative and quantitative research methodology this study has characteristics of a case study, consisting of [...] "a form of empirical research, which aims to investigate contemporary phenomena, considering the real context of the studied phenomenon, usually when boundaries between the context and the phenomenon are not well defined" [...], (Yin 2015).

The data that evidence the research were acquired through questionnaires applied to people with important roles within the organizations that were the object of study of this work.

Data Collection

The selection of respondents from the data collection instrument was defined by the fact that professionals work in space areas with a high level of specialization and great experience in the segment. This selection criterion was used to enable the realization that the selected professionals were able to provide the relevant information necessary to understand which stakeholders are most relevant to the organization.

After the establishment of the criteria for the selection of the group's characteristics, the search for professionals was based on a previous survey of the companies operating in the Brazilian space sector and their positions of prominence through research in publications such as articles and magazines and social networks like LinkedIn.

The data are relevant to the research were collected through the application of an electronic questionnaire, using Google Forms tool for submitting questions. The questions were sent to 9 space management experts to understand through their perceptions the degree of importance and influence of stakeholders in their organizations.

For a better understanding, the data collection instrument was divided into two parts, the first with 9 questions aimed at understanding the participant's profile, where we sought to acquire data regarding age, area of training, time of training, and experience in space management. The second part concerns the research itself, where we sought to identify and analyze stakeholders through 19 multiple schools and *Likert* scale questions. Regarding the identification and analysis of these stakeholders, the purpose was to know their degree of importance and influence on the organization and its activities. For this question, the Likert scale presented in Table 3 was used.

Table 3. Degree of Influence and Importance of Stakeholders

Attribute	1	2	3	4	5
Influence	Without influence	Low influence	Medium Influence	High Influence	Extreme Influence
Importance	Without Importance	Low Importance	Medium Importance	High Importance	Extreme Importance

Source: Elaborated by (Author, 2020).

Research Sample

The focus of the research was the Brazilian space sector companies that provide products and services for the most diverse space-oriented applications such as remote sensing, scientific and technological missions, telecommunications, meteorology, navigation, and positioning.

To understand the influence of stakeholders in the strategic management of companies in this sector, 6 companies were chosen from a total of 9 respondents. For reasons of anonymity, they will be called companies 1, 2, 3, 4, 5, and 6 here. Frame 4 gives a brief description of each company's profile.

Frame 4. Description of the companies studied

Company	Company Profile
Company 1	An international company that operates in the fields of defense, aerospace, engines, equipment, and telecommunications. One of its subsidiaries is headquartered in North America, where it operates in the development and manufacture of defense and aerospace interiors.
Company 2	This company works with the integration of space systems and is relatively new with only 8 years of experience. It seeks to provide satellite solutions for both civil and military needs. Some of its segments are Energy, Forestry, Mining, Environment, Oil, Gas, and Telecommunications.
Company 3	The company operates in the aerospace industry in the areas of vehicle launch system engineering, rockets, artificial satellites, power supply, special projects, and manufacturing engineering services.
Company 4	The aerospace company is active in the area of Aerospace (Design)&Build and Build to Print), services, innovation, space, and defense. The company's core business consists of the design, development, manufacture, assembly, testing, and qualification of spaceflight structures, and thermal systems.
Company 5	This company has been operating since the 1930s, with excellence in manufacturing and developing complete cutting tool solutions for the "aerospace, and automotive, among other" sectors.
Company 6	Recognized worldwide for the excellence and quality of its products and systems, it is a genuinely Brazilian private engineering company with over 50 years of experience. Holder of well-known know-how develops technology bringing innovative solutions for the defense and civil areas. It operates in the construction of aircraft, and the development, and manufacture of space vehicles for civil and military purposes. It has been distinguished by the production of systems capable of launching cruise missiles and guided rockets.

Source: Elaborated by (Author, 2020).

Research subjects

The questions were answered by professionals of the selected organizations. Each professional received an e-mail containing a survey questionnaire (with the main questions regarding this study) and a brief contextualization of the study objectives. From this questionnaire were extracted the main characteristics of the sample profile as can be seen in Frame 5.

Frame 5. Profile of study participants

Respondent Name	Function	Age	Interviewed Experience Time	Interviewee's training time	Company operating sector	Company business location
Respondent 1	Production manager	39	Over 10 years	10 to 15 years	Private	São José dos Campos
Respondent 2	Space Technology Director	56	Over 10 years	Over 15 years	Private	São José dos Campos
Respondent 3	Manager	59	Over 15 years	Over 15 years	Private	São José dos Campos
Respondent 4	Business analyst	44	Over 10 years	10 to 15 years	Private	Jacarei - SP
Respondent 5	Engineer	27	From 1 to 3 years	5 to 10 years	Private	São José dos Campos
Respondent 6	Engineering Director	34	Over 10 years	10 to 15 years	Private	São José dos Campos
Respondent 7	Stress engineer	27	3 to 7 years	0 to 5 years	Private	São José dos Campos
Respondent 8	Focal Point Engineering	28	7 to 10 years	0 to 5 years	Private	Jacarei - SP
Respondent 9	Focal Point Engineering	56	Over 10 years	Over 15 years	Private	Bragança Paulista – SP

Source: Elaborated by (Author, 2020).

From the data presented in Frame 5 it can be concluded that the average age of the participants is 41.1 years, 33.3% have a training time above 15 years and 33.3% are between 10 to 15 years, 22.2% between 0 and 5 years and 11.1% between 5 and 10 years.

As can be seen in Frame 5, the profile of the study participants is quite specialized with in-depth knowledge not only of the technical issue but also of management, with 88.9% of the sample having engineers training the other 11.1% administrators, 66,7% with experience in space over 10 years.

The data obtained through this questionnaire were fundamental for understanding the theme of this study, knowing the profile of respondents, and enabling analysis of the influence of stakeholders in the management and control of organizations operating in the space sector.

3 DATA ANALYSIS AND RESEARCH LIMITATIONS

For data analysis, each case was analyzed individually, and later each was compared with the others, following aspects presented in Frame 6.

Frame 6. Stages of analysis of data collected in case studies

Stages	Activities
1	Reliable transcription of the collected evidence
2	A detailed transcript of collected evidence
3	Análise das evidências coletadas com base nos principais conceitos
4	Crossing of evidence collected between cases

Source: Adapted from (Freitas and Jabbour, 2011).

The objective of this strategy is to make the reliable and detailed transcription of the data/evidence collected, and then to perform an analysis based on the theoretical framework, identifying the convergences and divergences of the literature, and finally, a comparison and crossing of the evidence of each case are performed, to obtain a literal or theoretical replication (Freitas and Jabbour 2011; Yin 2015).

Case-by-case analysis

Here the analysis of the six cases (companies described in the section Research Sample) according to the data acquired by the data collection forms is highlighted.

Case 1: It is observed in case 1 concerning the degree of importance and degree of influence of stakeholders for this organization, which it classifies as extremely important and influential. Its stakeholders are classified as "Dependent" who have the attributes of urgency and legitimacy, are actively engaged in guaranteeing success, but depend on the power of another stakeholder so that their demands are met.

In this organization, strategic management (resources of an organization to achieve objectives and goals) are defined annually. It is noted that the organization is concerned with identifying the strategies to be applied and who is responsible for defining them, and also how this identification is made.

To this end, it allows each manager to define how performance will be carried out within their teams. The monitoring is done weekly with meetings involving all managers and a member of each team, decomposing how the objectives and goals are being achieved within their area.

The organization has strategy programming tools such as strategic planning, and BSC - Balanced Performance Indicators, among others, which are monitored by all managers every week. The formalization process is implemented in the internal system to direct who will be responsible for performing the next activity to achieve the designated goal.

In this organization, there is the possibility of adjustments in the strategic planning during its implementation. If the need is perceived, the adjustments made are made official in the notes with a description of the reason for the change during the implementation. The person responsible for tracking and showing results after implementation will be the leader in this area.

Another point observed in this organization is that the suggestions made by the team, regardless of the role that the professional occupies in the company, are considered in the process of formation and/or implementation of strategies. The suggestions presented are passed first to the team manager and, being viable, it is presented to the other managers to implement.

Still on the changes that may occur in strategic planning such as those caused by the external environment, the organization manages these changes following the foreign market closely by its specialists, as this can greatly impact its near future. The significant changes that are considered are taken to the meetings to be discussed and perhaps implemented.

Case 2: This organization's stakeholders have a degree of importance taken, considered "extremely important" and "extremely influential". Classified as "Definitive" stakeholders, who seek the success of the project by encouraging everyone to do their best.

Regarding the strategic management of an organization's resources to achieve objectives and goals, this organization has annual planning. Concerning identifying the strategies to be applied, it is up to each manager to define how the performance will be done within their teams. For this identification is made weekly follow-up with meetings involving all managers and one member of each team.

To implement their strategies, programming tools such as strategic planning and BSC are used. The process of formalization of these takes place through meetings between those responsible, if there is a need for changes, they will be recorded.

Possible suggestions made by employees are considered in the process of formation and/or implementation of strategies. The presentation of suggestions should happen first to the person responsible for the team, being feasible it is sent to employees to be implemented.

The changes resulting from these suggestions or others such as those caused by the external environment are followed by their specialists because they can greatly impact the projects developed by the organization.

Case 3: The third organization participating in this study considers stakeholders to be "very important", with influence seen as level 3 on the rating scale namely "medium influence".

Regarding the classification of stakeholders, they are seen with characteristics of "Demanding" and "Discretionary".

Concerning strategic management, its strategic planning is carried out annually and the joint strategies are defined at the beginning of the year and applied throughout the semester, to verify if something has changed in this period. For this, the organization makes use of strategy programming tools but does not follow them as it should. These strategies derive from the formalization process carried out at meetings between those responsible, with the presentation of relevant results in graphs.

Possible adjustments to the strategic planning during its implementation will be formalized by the responsible members, accompanied by the manager of the area where the adjustment will be implemented.

The organization considers in the process of formation and/or implementation the suggestions of its collaborators. Employees must present what results the organization will bring and how they will be implemented.

Changes arising from the external environment are monitored by one of its specialists, as it deals with very specific products and its suppliers pass on these changes by increasing or decreasing the cost of each component, and these changes are passed on to the customer project.

Case 4: In the case of the fourth organization studied, it is noted that for it the stakeholders are extremely important and influential, having the profile of "Dependent" actively engaged in ensuring the success of the activities performed by the organization.

When questioning respondents about the use of resources in their company to achieve objectives and goals, he said that the organization makes use of strategic planning implemented annually, where the organization is concerned with identifying the strategies to be applied and those responsible for defining these strategies.

To achieve these goals, each manager defines how the action will be performed within their teams. With weekly follow-up with meetings involving all managers and one member of each team to break down how the goals and objectives are being achieved within their area, as help is presented reports and actions that are happening in the kaizens.

The organization makes use of strategy programming tools such as strategic planning, and BSC - Balanced Scorecard with monitoring performed by all managers weekly.

Strategies programmed through strategic planning have a formalization process carried out and implemented within the organization's internal system to direct who will be responsible for performing the next activity to achieve the designated goal. The results themselves are described in the system, where everyone has lit.

Adjustments in strategic planning during implementation, should the need be realized, and for this purpose, the reason for the change during implementation is officialized, the person responsible for applying, monitoring, and showing adjustments/results after implementation will be the leader of this area. Considering this, suggestions made by the team are very welcome, and all members can and should give their opinion.

Finally, the organization manages the changes brought about by the external environment, closely following its experts, as these changes can greatly impact its near future. Significant changes that are considered are taken to the meetings to be discussed and perhaps implemented.

Case 5: The fifth company object of this study classifies its stakeholders with extreme importance and Extreme Influence on their activities. He gives them the "Definitive" profiles that seek the success of the project, encouraging everyone to do their best.

In this organization strategic planning is performed annually, it is noted that there is a concern to identify the strategies to be applied in its planning.

For this, the organization has defined their managers as responsible, and they are responsible to present to the CEO of the company every two weeks the results of each team and what will be the next steps to reduce expenses and increase productivity.

Their strategy programming tools such as BSC - Balanced Scorecard are accompanied by all managers weekly. When there are strategies programmed through strategic planning, the formalization process takes place through meetings between those responsible and recorded in the minutes of the day. Results are presented through graphs and descriptions of the most relevant ones.

Regarding the possibility of adjustments in the strategic planning during its implementation, if the need is perceived, the organization reflects a lot about this adjustment as it may impact higher costs than

gains at this stage. It is necessary to discuss with the CEOs and managers involved how these possible adjustments will be implemented and who will monitor their implementation.

Possible suggestions regarding the possibility of adjustments in strategic planning are considered in the process of formation and/or implementation of the organization's strategies. It welcomed the suggestions, allowing all its members to give their opinion. For this they must first submit their suggestions to the responsible person for the team and being viable is presented to the other responsible to implement.

Regarding the changes brought about by the external environment, the organization manages these changes by following the foreign market closely with its specialists, as this can greatly impact its near future. Significant changes that are considered are taken to the meetings to be discussed and perhaps implemented.

Case 6: The last company approached in this study analyzes its stakeholders with varying aspects, by giving them different scores on the Likert rating scale of importance and influence, assigning "Very Influential" and "Medium Importance" sometimes attributing "Extreme Importance" and "Extreme Influence". Even with these different levels of influence and importance, the organization realizes that they can affect or be affected, positively or negatively, in its activities and projects. Its stakeholders are classified as "dangerous", possessing power and urgency, but there is no legitimacy. This stakeholder is coercive, coercive power often accompanying illegitimate status.

Its strategic planning is carried out annually so the company applies several resources to achieve its objectives, always concerned with identifying the strategies to be applied. Always defining the responsible for this application, being in charge of their managers who present to the CEO of the company every two weeks the results of each team and what will be the next steps to reduce expenses and increase productivity consequently to reach their goals.

The organization makes use of strategy programming tools, but not following how it should follow. For strategies programmed through strategic planning, the formalization process takes place and is controlled through the internal system that the organization has to direct who will be responsible for carrying out the next activity to reach the designated goal. The results themselves will be described in the system, to which everyone has access.

Possible adjustments to the strategic planning during its implementation, should the need be realized, happen through the formalization of what will be adjusted to the responsible members, being accompanied by the manager of the area where the adjustment will be implemented.

The suggestions presented by the team are considered in the process of formation and/ or implementation of the strategies being presented first to the responsible of the team and, being viable, is presented to the other responsible to implement.

Due to the changes caused by the external environment, when they occur the monitoring is done by a team specialized in technological changes, closely following all competitors and innovations in the market. Everything feasible and possible to implement in their projects is presented to CEOs and managers,

this presentation is made through simulations and presentation of costs to be implemented at this stage of the project, and these changes are passed on in the project.

Case Analysis

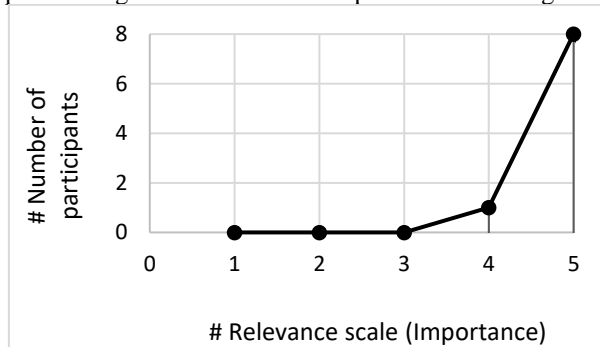
Regarding the understanding of the attribute's importance and influence on stakeholders, the use of the scale presented in Table 3 provided this understanding clearly because it attributes classificatory values that allowed us to quantify these variables, as can be seen in Graphic 1 and 2.

Graphic 1 shows the degree of importance of stakeholders to the organizations studied. It is noted in this graphic that the scale of relevance is defined where 1 refers to unimportant stakeholders, 2 is Low importance, 3 is Medium importance, 4 is Very important and 5 is Extreme importance, attribute 5 is the most relevant. Where 88.9% of the organizations studied classify their stakeholders as "extremely important" and 11.1% as "very important".

It is also noted that attributes 1, 2, and 3 did not score in this regard, this shows us how organizations in this sector consider their stakeholders important to their activities because their managers perceive the same attributes (power, legitimacy, and urgency), which gives them this perception of high importance.

Graphics

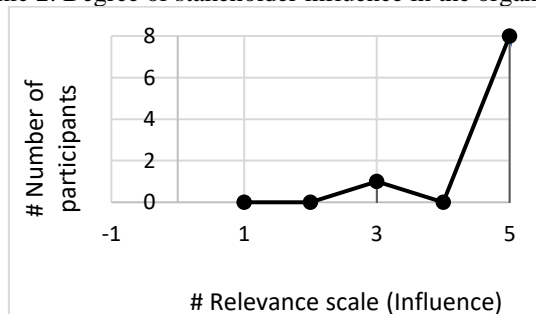
Graphic 1. Degree of stakeholder importance in the organization



Source: Elaborated by (Author, 2020).

Regarding the influence of stakeholders in the organization, 88.9% of the organizations studied classify them as "Extreme Influence" and 11.1% as "Medium influence", as can be seen in Graphic 2.

Graphic 2. Degree of stakeholder influence in the organization



Source: Elaborated by (Author, 2020).

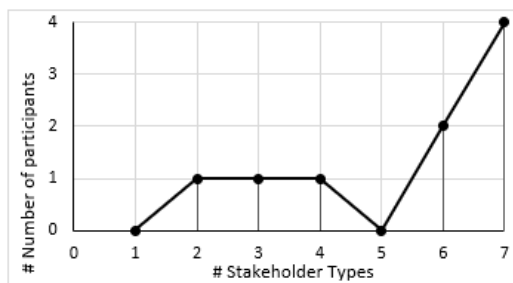
It is observed in this graphic that similarly to Graphic 1 the attribute of item 5 of the scale obtained the highest score regarding the influence of stakeholders in the organization, that is, most of the organizations studied classify them as "Extreme Influence" and a small part attributes "Medium Influence" on the organization's activities, as shown in Graphic 2.

Regarding the types of stakeholders presented by Mitchell et al. (1997), described herein subsection (Stakeholder power). Namely: (1)-Dormant, (2)-Discretionary, (3)-Demanding, (4)-Dominant, (5)-Dangerous, (6)-Dependent, (7)-Definitive.

Of the organizations studied 44.4% rate their stakeholders as "Definitive" who seek the success of the project, encouraging everyone to do their best. 22.2% rate as "Dependent" actively engaged in ensuring the success of the organization's activities, 11.1% rate as "Discretionary" that does not accept change well, 11.1% rate as "Demanding" that does not support or resist, and 11.1% rate it as "Dominant" that encourages change.

Note that the "type 7" stakeholder has more scope among employees in the organization and the power to define how a certain activity will be performed in the project. Since he has more knowledge and experience in the segment - going through other companies and being able to apply already applied experiences.

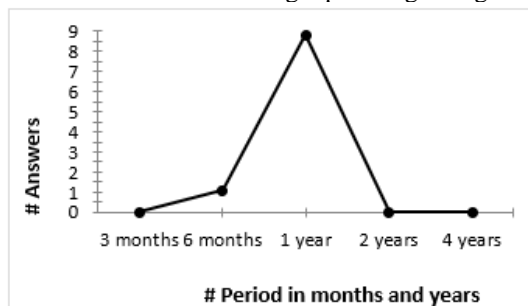
Graphic 3. Types of Stakeholders: (1)-Dormant, (2)-Discretionary, (3)-Demanding, (4)-Dominant, (5)-Dangerous, (6)-Dependent, (7)-Definitive



Source: Elaborated by (Author, 2020).

Graphic 4 addresses the issue of strategic planning of the organization. It is clear from this graphic that the strategic management or resources of an organization to achieve objectives and goals are set at 88.9% annually.

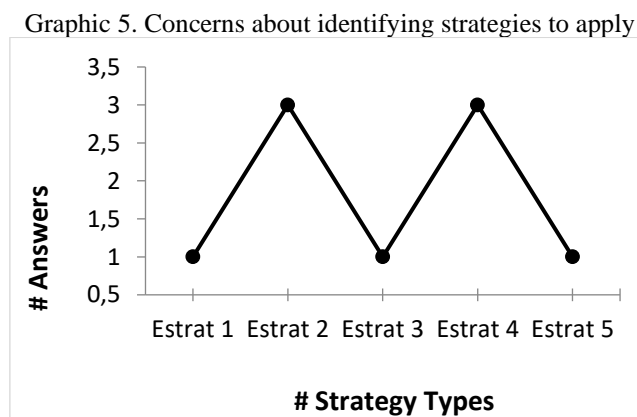
Graphic 4. Realization of strategic planning in organizations



Source: Elaborated by (Author, 2020).

This constant maintenance of strategic planning ensures organizations' assertive decisions and are aligned with the dynamic market to which they are inserted, this provides their direction and achievement of their goals in this determined period.

Graphic 5 shows us the concern of organizations in identifying the strategies to be applied in their planning, those responsible for defining them, and how these strategies are identified.



Source: Elaborated by (Author, 2020).

It is observed that among the strategies presented in Graphic 5, namely:

Strategy 1, involvement of all managers and managers to define each stage.

Strategy 2, each manager defines how the work will be done within their teams.

Strategy 3, each manager must define how it will be done and report weekly to the CEO.

Strategy 4, all managers are responsible for presenting to the CEO of the company every two weeks the results of each team and what are the next steps to reduce expenses and increase productivity.

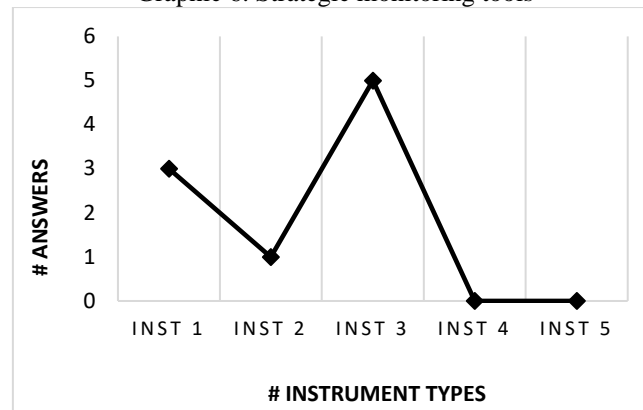
Strategy 5, we set strategies together at the beginning of the year and apply them throughout the semester, so we will see if anything has changed in that period.

The most adopted strategies are 2 and 4 with 33.3% of the choices each, followed by the others with 11.1% each. This shows us that organizations are looking for their managers to be more independent with the freedom to set goals or objectives in addition to organizing, directing, and controlling team activities, always seeking to reduce expenses, increase/improve processes and increase productivity.

For the definition of programming of strategies according to Graphic 6. Organizations were asked if they use any type of tool or method as an aid and how they are monitored, 55.6% answered yes with follow-up done by all managers weekly, another 33.3% answered yes with follow-up by a member of the organization and 11.1% answered yes, but they do not follow as they should follow.

This shows us that the monitoring of the adopted strategies is important to measure the results obtained or to evaluate the progress of the organization's objectives, carried out through the monitoring of goals and indicators, contained in the monitoring plan implemented to monitor the activities of the organization according to the achievement of expected results.

Graphic 6. Strategic monitoring tools



Source: Elaborated by (Author, 2020).

Graphic 7 addresses the process of strategy formalization through strategic planning when there are, who is responsible for this formalization, and whether there is any outcome evaluation control mechanism that the organization makes use of.

For this questioning 5 formalization processes were established as presented in Graphic 7 namely each process consists of:

Proces1: formalization takes place at the meeting between those responsible and is recorded in the minutes of the day;

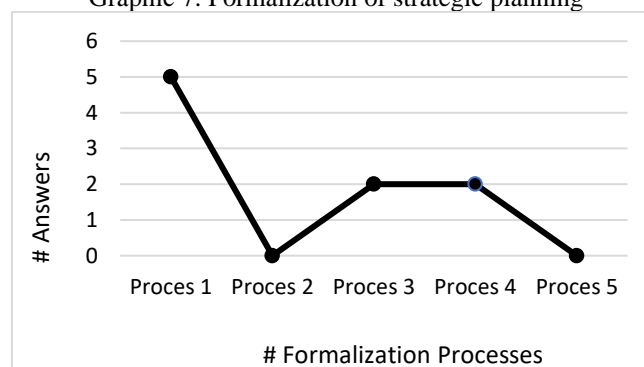
Proces2: the formulation is made by e-mail to those responsible;

Proces3: implanted in the organization's internal system to direct who will be responsible for carrying out the next activity to achieve the designated goal;

Proces4: At the organization's meeting, each one takes notes of how it will be implemented and presents the results;

Proces5: There are no programmed strategies.

Graphic 7. Formalization of strategic planning



Source: Elaborated by (Author, 2020).

It is noted in Graphic 7 that among the processes of formalization of strategies the most used is "Proces1" with 55.6% of the organizations studied using the same with "Proces2" and "Proces3" with 22.2% respectively. As a result, meetings are essential for the strategy formalization process, and when conducted correctly and effectively, managers can align their teams. It contributes to making day-to-day processes

much more agile, dynamic, and efficient, ensuring high productivity and task efficiency and enabling greater team integration, leadership closeness, and to-do resolution through brainstorming during your tour.

Figure 8 presents the possibilities of adjustments in the strategic planning during its implementation and if this need is perceived, who is responsible for applying and monitoring the adjustments? The possibilities presented here are presented in Graphic 8 as: "Possib1", "Possib2", "Possib3", "Possib4" and "Possib5". Where they are described as:

Possib1: adjustments through the formalization of what will be adjusted to the responsible members, being accompanied by the area manager.

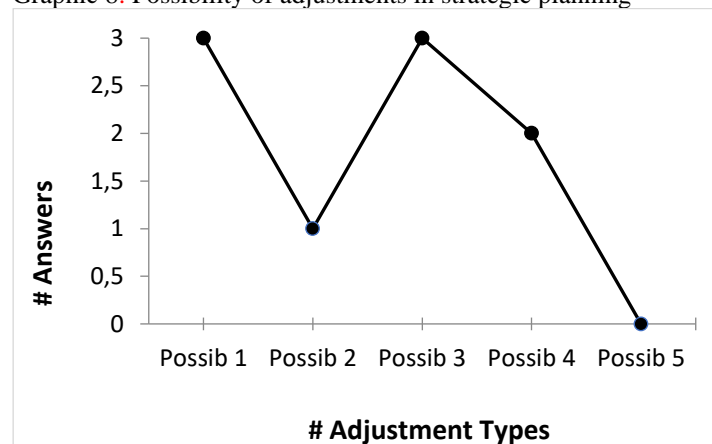
Possib2: adjustments through conversation directly with the person in charge of the area.

Possib3: Possibilities of adjustments with officialization in the minutes, with the reason for the change during implementation.

Possib4: there may be possibilities for adjustments, but this may result in higher costs than gains at this stage.

Possib5: There are no possibilities for adjustments, as we will go to the end with the objectives and goals set at the beginning.

Graphic 8. Possibility of adjustments in strategic planning



Source: Elaborated by (Author, 2020).

Graphic 8 shows that the possibilities of adjustments 1 and 3 (Possib1 and Possib3) are the most adopted by organizations with 33.3% of the choices respectively. While the possibility of adjustments 2 and 4 obtained 11.1% and 22.2% respectively. It is observed that the organizations studied to follow the strategic planning and are ready to adapt them when necessary, such as when the plan is not producing the expected result, or when changes arise and need to be considered.

Graphic 9 addresses the questioning about the formation process and/or implementation of the organization's strategies. This approach was based on knowing how the organization takes into account the suggestions made by the team for the strategic planning and formation process and/or implementation of strategies, regardless of the role the professional occupies. To this end, options have been created regarding

levels of acceptance of the organization to suggestions, namely options: Op.1, Op.2, Op.3, Op.4 and Op.5 described below:

Op.1: Yes, the presentation must happen first to the person in charge of the team and, being viable, it is presented to the other people responsible for implementing.

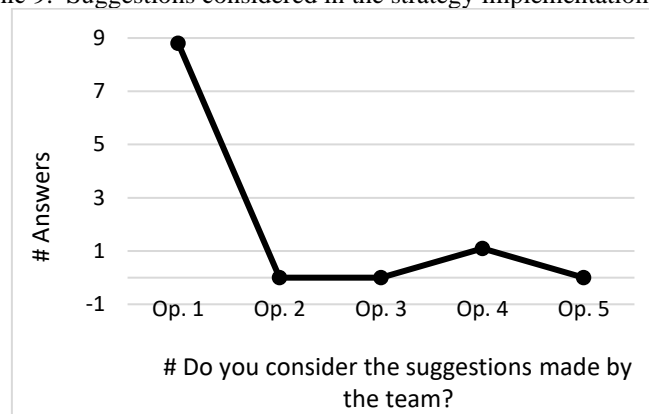
Op.2: Yes, a form must be filled in the internal system that will be directed to those responsible to analyze whether it is feasible to implement.

Op.3: Yes, suggestions are welcome, as all members can and should give their opinion. It will be presented at the next meeting and evaluated if it will have positive results to implement.

Op.4: Perhaps the member making the suggestion should present what results in the organization will bring, which project phases will be achieved, and how they will be implemented.

Op.5: No, we will go all the way with the objectives and goals set at the beginning.

Graphic 9. Suggestions considered in the strategy implementation process



Source: Elaborated by (Author, 2020).

It can be seen in Graphic 9 that Option 1 obtained 88.9% and Option 4 11.1% while the others did not score this shows us that aerospace companies have defined improvement goals and all employees can participate.

Graphic 10 addresses the theme: how the organization manages the changes caused by the external environment and whether these have led to the need for changes in strategies, for this the items were defined (ME.1, ME.2, ME.3, ME. 4, and ME.5):

ME.1: the external market is closely monitored by our specialists, as this can impact us a lot shorter.

ME.2: Yes, follow-up by one of our specialists. We use very specific products and our suppliers pass on these changes by increasing or decreasing the cost of each component. These changes are passed on to the project.

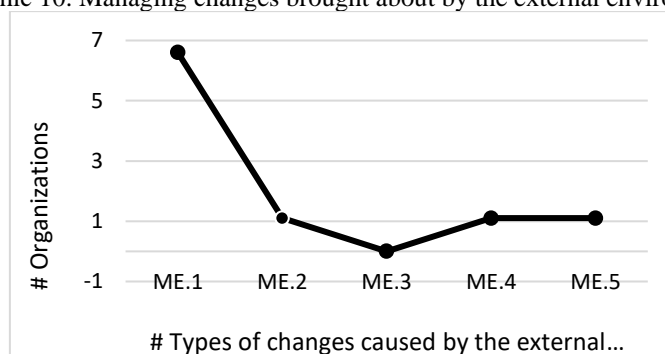
ME.3: We do not follow, when we set our goals and objectives we follow until the end.

ME.4: Monitoring is done by a team that specializes in technological change, closely following all competitors and innovations in the market. Everything feasible and possible to implement in our projects

is presented to CEOs and managers, this presentation is made through simulations and a presentation of costs to be implemented at this stage of the project.

ME.5: we follow up every two months. We focus on achieving the goals that were set at the beginning of the project, and we avoid making changes that could raise the cost.

Graphic 10. Managing changes brought about by the external environment



Source: Elaborated by (Author, 2020).

Item ME.1 obtained 66.6% of votes while items ME.2, ME.4, and ME.5 obtained 11.1% each, and item ME.3 was not considered by the participants. This shows us that organizations are always aware of changes in their external environment such as economic difficulties, uncertainties about government policies, and technological changes.

Most of the companies studied have specialists to closely monitor these changes that may influence their strategic decisions.

Research Limitations

Given the foregoing, some of the research's limitations concern access to private-sector aerospace professionals, who are mostly restricted in their access. Many were unable to respond during work hours, while others were not internally authorized to open search links on their work machines (computers) precisely because they had restricted information. Some of the professionals who took the time to answer the form were on missions to work outside their home country, demanding more time to obtain survey responses.

Some limitations concern the collection of internal information from companies where access to internal data was not obtained, as it is restricted information and not disclosed to the general public, only with the authorization of the CEO and representatives, and this prior authorization was not obtained.

Some of the professionals who were willing to answer the form were previously contacted by the social network LinkedIn, where the idea of the research was presented and consequently obtained their approval by sending the form link. Some professionals did not refer to the company they work for, as they are internal norms and they would be breaching the code of conduct and ethics.

Another limitation is related to the quantity of the sample, which in this study is related to the maximum that can be collected, which may imply to say that the sample size interferes with the reliability of the research regarding the verification of hypotheses. More robust samples give us the possibility of having larger sample sizes allowing hypothesis testing to be more concise. However, due to the little variability of the theme of this study, there is no need for an excessively large sample.

Analysis and discussion of results

Data analysis (results) is essential for successful research. This analysis seeks to highlight the relationships between the subject studied and other factors, as well as analyze correlations between the data obtained in the collection instruments (Marconi and Lakatos, 2017).

Miles and Huberman (1994) present in their study a form of analysis, where each case is analyzed individually (as can be seen in the analysis performed in the section (Case-by-case analysis) so that there is a later comparison of the cases with each other. For this study, we opted for the method of Miles and Huberman (1994), with analysis of the cases individually as described in the section (Case-by-case analysis) and a comparison between them as described in Table 7, constructed taking into account what was observed in the collection instruments of data.

Regarding the analysis of data, they reveal the perception of managers (interviewees) about the importance and influence of stakeholders for the organization and show us that these two factors are closely linked concerning stakeholders of an organization.

Table 7. Stakeholder power in space sector organizations

Cases	Stakeholder power in space sector organizations
Case 1	This organization ranks its stakeholders with great power, with urgent and legitimate claims to carry out its activities.
Case 2	As in case 1 in this organization, its stakeholders have power over its activities, with legitimacy and urgency. In this case, the company should pay close attention to this group.
Case 3	In this case, the stakeholders are important but are not seen with great power of influence, ie for this organization they are without power and legitimacy, with low influence on the project, but should be monitored.
Case 4	Note that in this case the stakeholders with power and influence, having the profile of "Dependent", always seek to ensure the success of activities performed by the organization.
Case 5	In this case, the power of influence or capacity of the stakeholder to impact a project is great, they have legitimacy and usually show urgency. Getting the organization to pay close attention to this group.
Case 6	In this organization the stakeholders have various aspects, sometimes they are seen as having a lot of power and sometimes not, but the organization realized that they can affect or be affected, positively or negatively, in their activities and projects.

Source: Elaborated by (Author, 2020).

It is noted in this study that due to the strategic importance of stakeholders to organizations to the need that their classification and categorization must be judicious for good strategic management of the relationship with them.

The comparison between the perceptions of stakeholder power for each of the cases presented in Table 7 shows that the organizations studied, realize that the company is not the only one acting in favor of

their particular objectives, and recognize the fundamental importance of stakeholders in their activities and their daily life.

There is a subtle difference on the part of the companies studied (interviewed) regarding the various types of stakeholders and their influence and importance.

The data collection instrument contributed to the identification of several important elements, such as the particularity of the Brazilian space sector organizations, their approaches, and challenges regarding strategic management.

4 FINAL CONSIDERATIONS

Due to the results, it is noted that understanding and dealing with the impacts of stakeholders on the strategic management of an organization becomes a differential for organizations and/or managers since stakeholders are made up of different groups with divergent interests, consequently, these interests may come to converge in conflicts, but the way managers handle these conflicts can lead to a result where everyone will benefit.

Taking into account the aspects of the cases studied here, organizations must create constant communication with stakeholders to keep their activities stable and lasting. This ongoing dialogue with stakeholders should focus on their expectations and demands so that these aspects are balanced and thus ensure the successful execution of the project.

Regarding the impact of stakeholder power and influence on space sector organizations, this study contributes to the understanding of the strategic need for stakeholder relationship management according to the perception of the companies studied here. Observing this perception, it was noted when tabulating the data collected that for managers, the more attributes presented by (Mitchell et al. 1997), the stakeholder has more important and more power he has over the organization.

REFERENCES

- Bourne, Lynda, and Derek H. T. Walker. 2005. "Visualising and Mapping Stakeholder Influence." *Management Decision* 43(5):649–60. doi: 10.1108/00251740510597680.
- Freeman, R. E. 2010. *Strategic Management: A Stakeholder Approach*. edited by Cambridge University Press. Nova Iorque.
- Freitas, R. S. Wesley, and C. J. Charbel Jabbour. 2011. "Utilizando Estudo de Caso(s) Como Estratégia de Pesquisa Qualitativa: Boas Práticas e Sugestões." *Estudo e Debate, Lajeado*.
- Heldman, Kim. 2017. *Gerência de Projetos: Guia Para o Exame Oficial Do PMI*. 7th ed. Rio de Janeiro: Elsevier Academic.
- Laplume, André O., Karan Sonpar, and Reginald A. Litz. 2008. *Stakeholder Theory: Reviewing a Theory That Moves Us*. Vol. 34.
- Lyra, Mariana Galvão, Ricardo Corrêa Gomes, and Laércio Antônio Gonçalves Jacovine. 2009. "O Papel Dos Stakeholders Na Sustentabilidade Da Empresa: Contribuições Para Construção de Um Modelo de Análise." *Revista de Administração Contemporânea* 13(spe):39–52. doi: 10.1590/S1415-65552009000500004.
- Mainardes, EW, Helena Alves, Mário Raposo, and MJC Souza Domingues. 2011. "Um Novo Modelo de Classificação de Stakeholders." *Encontro de Estudos Em Estratégia* 1–13.
- Marconi, Marina de Andrade, and Eva Maria Lakatos. 2017. *Metodologia Científica*. 7th ed. São Paulo: Atlas.
- Mitchell, Ronald K., Donna J. Wood, and Bradley Agle. 1997. "Toward a Theory of Stakeholders Identification and Salience: Defining the Principle of Who and What Counts." *Academy of Management Review* 22(4):853–86. doi: 10.5465/AMR.1997.9711022105.
- NASA. 2018. "NASA Strategic Plan 2018." *NASA - National Aeronautics and Space Administration* 64.
- Oliveira, Luis Martins. 2002. *Controladoria Estratégica*. São Paulo: Atlas.
- Pinto, Murilo Sergio Lucena, and Rezilda Rodrigues Oliveira. 2004. "Estratégias Competitivas No Setor Elétrico Brasileiro: Uma Análise Dos Interesses e Expectativas Dos Atores Da Chesf." *Revista de Administração Contemporânea* 8(spe):131–55. doi: 10.1590/S1415-65552004000500008.
- PMI. 2017. *A Guide to the Project Management Body of Knowledge - PMBOK Guide*.
- Rocha, Thelma, and Andrea Goldschmidt. 2010. *Gestao Dos Stakeholders*. São Paulo: Saraiva.
- Teixeira, Carlos Alberto Chagas, and Vera Lucia Chaves Alonso. 2014. "A Importância Do Planejamento Estratégico Para As Pequenas Empresas." *XI Simpósio de Excelência Em Gestão e Tecnologia* 1–8.
- Wood, Donna J. 1990. *Business and Society*. Pittsburgh: Harper Collins Publishers.
- Yin, Robert K. 2015. *Estudo de Caso: Planejamento e Métodos*. 5th ed. Porto Alegre-RS: Bookman.