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Project Stakeholder Evolution

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[RQ1: Who are the most, and least, powerful, interested and dynamic stakeholders in Norwegian projects from different sectors?

RQ2: How do stakeholder dynamics look after the front-end phase of a project?

RQ3: Are there patterns demonstrated by stakeholders depending on the business sector to which a project belongs to?

RQ4: Is there a correlation between the complexity of the stakeholder environment surrounding a project at different phases and the level of inclusion and engagement of stakeholders? And is there a correlation between the levels of Power and Interest?]

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Abstract

This is a Master thesis, holding the title “Project Stakeholder Evolution,” written as the final graduation requisite for the Project Management Master program at the Norwegian University of Science in Technology, under the supervision and guidance of Professor Bjørn Andersen at the Department of Mechanical and Industrial Engineering.

Here, the rapidly growing concept of stakeholder dynamics is addressed, by means of data collected from an online survey sent out to participants from Prosjekt Norge, and analyzed in order to better understand the Power/Interest relationship between stakeholders and projects at the different phases of a project’s lifecycle.

Data from different business sectors was collected, processed and analyzed, and it showed how stakeholders can be static or dynamic, as well as their rankings as the most dynamic and the least dynamic across a range of projects from diverse business sectors. It also shows the high correlation between stakeholder Power and Interest, and the complexity of the stakeholder environment and the level of inclusion and engagement of stakeholders at the different phases of a project.

ACKNOWLEDGEMENT

I dedicate this thesis to the project management community all over the world, in the hopes that it will provide help and knowledge when and where needed.

I dedicate this piece of work to my family and friends, without whom I would never be writing these lines today.

And a special dedication goes out to my supervisor, Bjørn, for the immense support he has shown over the past year, and whose door was always open whenever I needed guidance and support.

Preface

I started developing a passion for project management in last years of my undergraduate studies, through my engagement with AIESEC, one of the largest youth-run organizations in the world. During my three years in the organization, I had the opportunity to be a part of multinational teams while volunteering in three different countries, as well as leading my own teams to facilitate similar exchange experiences to other students and managing a project with volunteers from around the world.

Through the Project Management Master programme at the Norwegian University of Science and Technology, I got the chance to back up my previous experiences as a volunteer with academic and professional knowledge, through an academic staff that was always there for their students, never held back any knowledge from us, and an ambient that was more motivational for learning than anything else I had ever experienced.

The stakeholder management process is one of the most crucial, and toughest, project activities, meaning that requires an immense amount of knowledge and skills that probably cannot be taught, but acquired through practice and experience. Stakeholder management can mean the difference between project success and failure, and it requires project personnel to possess high communication and people management skills.

When I decided to take over the topic of Project Stakeholder Evolution as my Master thesis, I was overwhelmed with the idea, and I knew I was stepping too far out of my comfort zone, but I had faith and trust in the sincere guidance I was about to get from my supervisor, Bjørn, and the knowledge I would earn working under his guidance.

Today, I am immensely grateful for choosing this topic in the first place, and for every minute I spent working on this thesis, it was the right choice.

Omar ElWakeel

June 2018, Trondheim

Summary

This Master thesis introduces the interested, rapidly growing concept of stakeholder dynamics and evolution in projects, covering a proposed list of ten stakeholders, engaged in projects from various industries and business sectors within Norway, across the four phases of project execution. The aim is to contribute to answering four research questions: (1) Who are the most, and least, powerful, interested and dynamic stakeholders in Norwegian projects from different sectors?; (2) How do stakeholder dynamics after the front-end phase of a project?; (3) Are there patterns demonstrated by stakeholders depending on the business sector to which a project belongs to?; and (4) Is there a correlation between the complexity of the stakeholder environment surrounding a project at different phases and the level of inclusion and engagement of stakeholders? And is there a correlation between the levels of Power and Interest?

In order to do so, a literature review is carried out covering general aspects of stakeholder management in projects; how a stakeholder is identified, tools and techniques used in the process of stakeholder mapping and modeling, an introduction to the concept of stakeholder dynamics, the influence and opposition strategies employed by different stakeholders, and the role of media as a stakeholder in its own right and a voice for other stakeholders to express their opinions, expectations and opposition. Additionally, numerical data is collected from representatives of organizations that are part of Prosjekt Norge by means of an online survey, which is then quantified and processed through Microsoft Excel for easier presentation and understanding.

It is then found that the stakeholder dynamics is unique for each business sector, and hard to be generalized, where different stakeholders have been ranked differently per each sector, and per each project within the same industry. On the other hand, it is found that there are very high correlations between Power and Interest on one side, and Inclusion and Complexity on the other side.

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1. Introduction

Stakeholder management is one of the toughest activities that a project researcher or practitioner has to deal with. This is due to the inherent complexity and unexpectedness of the human nature, which makes it nearly impossible to predict the outcome of human actions. This activity has so far been carried usually in the beginning of a project, where stakeholders were identified and modeled, and assumed to stay where they stood until project completion.

In this Master thesis, a challenging assumption is made, proposing that stakeholders are not static, but of dynamic nature, meaning that, whatever the stakeholder management tool being used, the stakeholders continuously change their position on the landscape of that tool, requiring continuous attention, management strategies and a proactive approach, based on the new positioning.

In the next chapter, and based on these assumptions, a literature review is carried out, of the stakeholder management process and the different stakeholder identification and management tools, the concept of stakeholder dynamics is introduced, different stakeholder influence strategies, and their effects on projects are discussed, and the role of Media as an effective stakeholder, as well as a voice for other stakeholders, is demonstrated.

Following that chapter, the research methodology is explained, explaining the processes of designing the research and formulating the research questions, collecting the data necessary by means of an online survey, analyzing the collected data through Microsoft Excel charts and functions, and finally evaluating the research methodology and criticizing it based on reliability, validity and generalizability.

In the following chapter, the findings from the data analysis are presented, with some reflections and thoughts on the logic and reasoning behind them, regarding the power, interest and dynamics of stakeholders engaged in projects from different business sectors.

In the discussion chapter, we go deeper into projects from each industry, and try to follow any possible patterns in the stakeholder behavior or changes in Power and Interest, and calculate the correlation factors between Power and Interest, and the level of stakeholder inclusion and engagement by project organizations and the complexity of the stakeholder environment surrounding the project.

Finally, the thesis is concluded by summarizing and highlighting the most important findings and arguments from the two preceding chapters, and suggestions and recommendations for

further research are proposed, in order to improve and solidify the findings from this thesis, and based on the lessons learned from the challenges faced in the process of developing it.

2. Literature Review

In the first section of this chapter, we look at different ways of identifying stakeholders and how to place them on a stakeholder map or stakeholder management model, using different tools and techniques. Afterwards the concept of stakeholder dynamics is introduced, where the stakeholder dynamics can be studied through position changes that these stakeholders experience during the course of a project, helping us get more understanding of which stakeholders are more dynamic and which are of a more static nature than others, as well as how stakeholder dynamics work at different project stages and in different business sectors.

The two topics discussed later on are the influence strategies which allow stakeholders to earn or demonstrate their Power over a project's decision-making process, and the influence of media, since it has been introduced in different articles as one of the most powerful stakeholder groups, with the ability to influence other stakeholder groups and being their voice. This has triggered an interest to figure out if that could possibly apply to the projects included in this study as well.

2.1. Stakeholder Management in Projects

A project can be seen as a temporary organization (Lundin & Söderholm, 1995), established to create benefits through transitions, and one that needs resources (Pfeffer & Salancik, 1978). Individuals, groups, or entities, which may affect or be affected by the project – the so-called 'stakeholders' (Freeman, 1984) – possess various sorts of resources (e.g., expertise, decision power, money, goodwill, influential contacts, and so forth). An important part of project management is to interact with the stakeholders in order to make them contribute what the project needs. (Eskerod & Vaagaasar, 2014)

Project stakeholder management literature relies to a great extent on stakeholder theory within strategic management (Eskerod & Huemann, 2013). The literature on stakeholder theory (Freeman, 1984; Jawahar & McLaughlin, 2001; Mitchell, Agle, & Wood, 1997; Parmar et al., 2010; Savage, Nix, Whitehead, & Blair, 1991) suggests that the focal organization (i.e., the project) should apply certain stakeholder management strategies based on the assessment of the stakeholder at hand. The literature, however, has a number of limitations: It does not provide a very detailed description of the contents of the stakeholder management strategies; nor does it touch upon the challenges and possibilities related to changing strategies during a time span in a detailed manner (Parmar et al., 2010). Further, it does not specifically relate the strategies to temporary organizations like projects (Littau, Jujagiri, & Adlbrecht, 2010).

Since project stakeholders can be argued to play a major role in the accomplishment of project tasks and objectives, and because the stakeholder management process has so far proved to depend to a great extent on the project manager's skills, relationships and experience, it has been suggested that a formal and systematic stakeholder management process is needed (Karlsen, 2002). This in turn points out the need for a better understanding of how stakeholders interact with a project; their attitudes, collaboration or opposition strategies, etc., and how this all changes with time and with different decisions and phases of a project lifecycle, making it a continuous and adaptive activity that cannot be ignored or overlooked.

For a better understanding of the stakeholder management process, we start with the most important activity, on which the whole process is constructed, namely stakeholder identification.

2.2. Stakeholder Identification

Freeman (1984) provides a very broad definition of stakeholders, suggesting that stakeholders are groups or individuals that are actively involved in a project or whose interest may be affected by project execution or project completion. Some authors and researchers (El-Gohary, Osman, & El-Diraby, 2006; Fraser & Zhu, 2008; Kolltveit & Grønhaug, 2004; Project Management, 2008; Turner, 1999; Ward & Chapman, 2008) have followed the same line of providing a very broad definition of stakeholders, suggesting that stakeholders are any person or group that may affect or be affected by project implementation or completion. This opens the door for virtually everyone to be considered as a stakeholder (Aaltonen & Kujala, 2010).

This has led to some researchers (Chinyio & Akintoye, 2008; Cleland, 1986, 1998; Olander, 2007) adapting narrower definitions of the notion "stakeholder" based on the stakes that a stakeholder actually holds. Cleland (1986) for example defines stakeholders' claims through their objective or perceived legitimacy (Aaltonen & Kujala, 2010). Mitchell et al. (1997) also have based their stakeholder identification model on a stakeholder's salience to the organization at a certain point of time, suggesting that an element of dynamism exists in the stakeholder environment surrounding a project, where stakeholders can "win" or "lose" their salience and significance in the stakeholder network affecting a project.

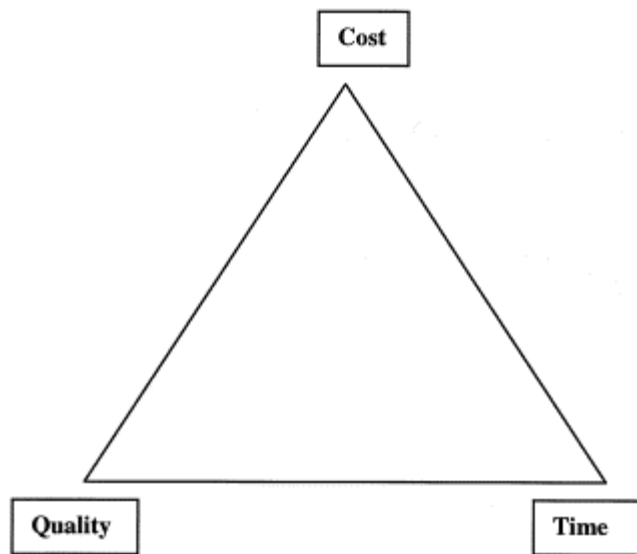


Figure 1 The Iron Triangle (Source: (Atkinson, 1999))

Furthermore, Davis (2014) has presented a very comprehensive classification of stakeholders based on their perception of project success. Project success can be believed to be a major driver behind a stakeholder's level of Interest in a project. This success can be defined in terms of financial value, significant to the project sponsor for example, moral value, in the case of the project manager and the project team members, or the value earned using it, probably mostly concerning the customer or the end user, etc. In general, project success, no matter how a stakeholder or a stakeholder representative perceives it, can be of critical influence on the stakeholder network evolution and dynamics.

From a time-based point of view, it can be pointed out that project success, until recently, was measured based on only three criteria: time, cost, and quality, forming the Iron Triangle (**Figure 1**). However, success in satisfying the stakeholders and maintaining a healthy and long-lasting relationships and partnerships with them has of late been added to the list of priorities set by project owners and project managers.

Although stakeholder mapping and modeling can be considered a matter of critical importance, but according to the broad definition of the concept of stakeholders, as any person or group of people who may affect or be affected by project implementation or completion (Freeman, 1984), everyone can be considered a stakeholder to an organization or a project (Aaltonen & Kujala, 2010). This is why, in order to make the stakeholder identification process easier and more accurate, some authors have produced narrower definitions of the term "stakeholder", which allow finer and more concentrated categorization of stakeholders (Achterkamp & Vos, 2008). This has led to different categorizations of stakeholders like those who have "potential for collaboration" or "potential for threatening" (Blair & Whitehead, 1988), "fiduciary" and

“non-fiduciary” stakeholders (Goodpaster, 1988), “primary” and “secondary” stakeholders (M. E. Clarkson, 1995), and “voluntary” and “involuntary” stakeholders (M. Clarkson, 1994).

After the stakeholders have been identified, and in order to proceed with managing them, certain tools have been developed and used by researchers and practitioners, which could help model and track stakeholder dynamics. Some of these tools are discussed in the next sub-section.

2.3. Stakeholder Mapping and Modeling

Many attempts at studying and mapping the stakeholder environment surrounding an organization or a project have been carried out. However, most of which have proved to be of a static nature, meaning that they place the stakeholders on the stakeholder model based on different criteria or attributes, and assume that such stakeholders remain static throughout the project, probably due to the fact that dynamics remains difficult to model even in economics (Windsor, 2010). This could logically prove to be untrue, because of the complexity of the stakeholder network and interactions, and also due to the personnel replacement in such networks, and the environmental changes, including strategies and laws and regulations, etc.

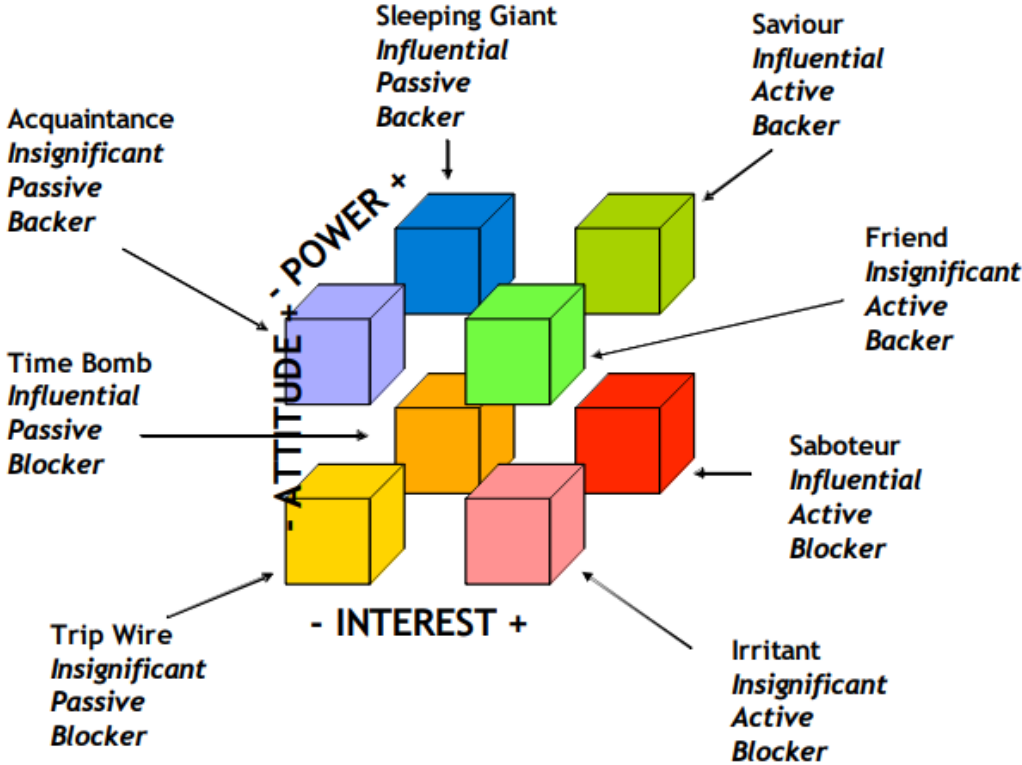


Figure 2 Stakeholder Map (Source: (Murray-Webster & Simon, 2006))

When a stakeholder or an organization appoints a new representative in the stakeholder environment or network, they arrive with their own background, experience, as well as interests,

needs, and expectations that they think are for the best interest of the organization or stakeholder they are representing. Also, following major decisions and milestones, and in between different phases of a project, new collaborations, coalitions, as well as oppositions are formed. This suggests that the stakeholder position on the stakeholder map or model cannot be considered stable or static along the lifecycle of the project. Instead, it can be observed that the stakeholder positioning and modelling keeps changing and reforming, and the salience of a stakeholder also changes from one point in time to another.

One of the stakeholder identification and mapping tools that have proved to be both useful and popular, is Murray-Webster and Simon (2006)'s model, where they suggest that stakeholders can be classified according to their levels of power, interest, and attitude (**Figure 2**). According to the different combinations of high and/or low levels of the three criteria, a certain stakeholder can be pinpointed on the model, be assigned to one of eight categories based on the combination of the levels of power, interest and attitude: sleeping giant, savior, friend, saboteur, irritant, trip wire, time bomb, or acquaintance. Then, an appropriate strategy to deal with such stakeholder can be developed.

In their research, Aaltonen, Kujala, Havela, and Savage (2015) have utilized a salience/support matrix (**Figure 3**), which is of high similarity to the Power/Interest matrix that has been utilized in analyzing the data obtained in this Master thesis (**Figure 7**), where the Degree of Salience can replace the Power dimension, while the Degree of Supportiveness can act as a replacement to the Interest dimension.

In the following sub-section, the concept of stakeholder dynamics is introduced and explained, based on the work of researchers from different countries and geographical locations.

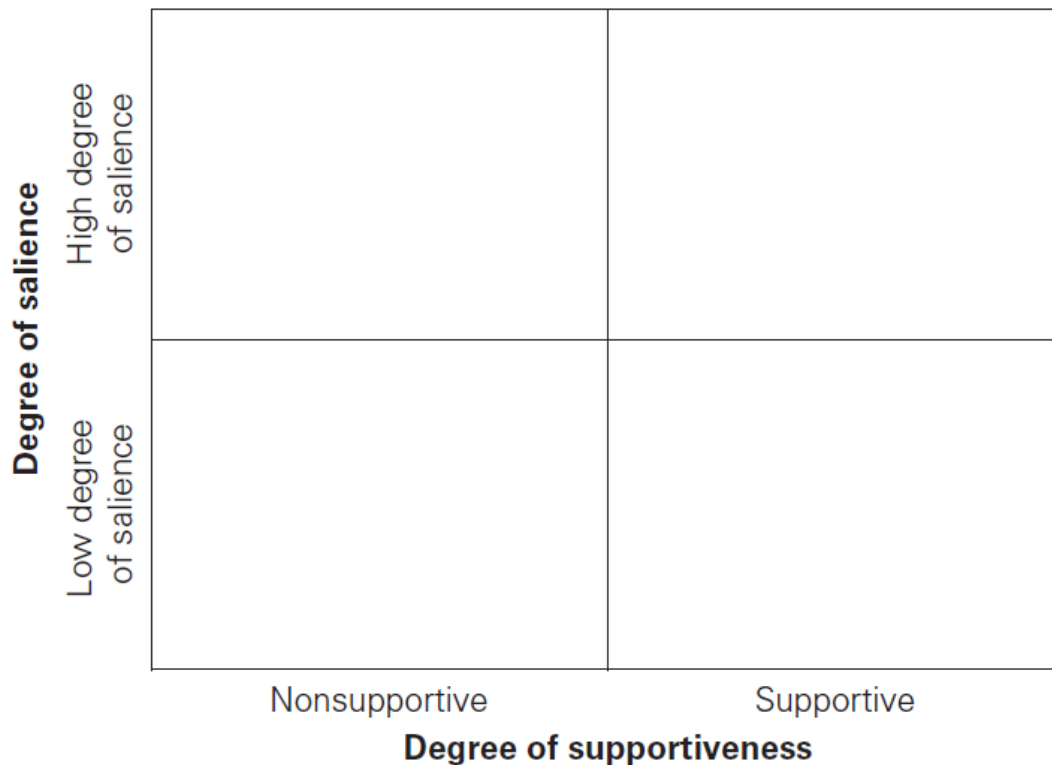


Figure 3 Salience/position-matrix (Source: (Aaltonen et al., 2015))

2.4. Stakeholder Dynamics

The literature directly tackling the topic of stakeholder evolution and dynamics proved to be scarce and rare, and some of the research available was focused on the earlier phases of the projects, excluding the rest of the project execution process, where stakeholders could possibly demonstrate much higher levels of stakeholder dynamics to be observed and monitored.

Introducing the concept of dynamics into the stakeholder management process suggests complexity (i.e., a system of relationships among multiple constants and variables), heterogeneity (i.e., cross-sectional variation at any point in time), and path-dependent change over time. On the contrary, a static analysis, like a constant, has no time dimension (i.e., no dating). A constant does not change with time, which is irreversibly forward in direction (Windsor, 2010). The introduction of such concept can suggest that the nature of the stakeholder environment keeps changing along with the altering attitudes of different stakeholders.

These attitudes can be either supportive to the organization or the project or opposing, and stakeholders have been seen to form coalitions and pressure groups to influence the decision-making process during a project’s execution. And it has also been observed that stakeholders usually act in a negative manner when they are overlooked or when the information about the project and the purpose behind its implementation are miscommunicated to these stakeholders. (Papadopoulos & Merali, 2008)

On the other hand, Papadopoulos and Merali (2008) show the effect of good communication and the value that a project adds to stakeholders that almost completely changes the attitude of such stakeholders from opposition to support. This demonstrates the effect of good communication and inclusion on the project-stakeholder relationship, based on mutual value addition, which is vital throughout the entire lifecycle of the project.

It can be noticed that the point of departure for almost all the research and studies on stakeholder management is the theory of stakeholder identification and salience (Mitchell et al., 1997). Therefore, it was important to thoroughly read and understand the logic and reasoning in that research and try to connect it to this Master thesis.

In their research, Mitchell et al. (1997) classified stakeholders based on their salience to the organization based on the possession of three main criteria or attributes: the stakeholder's power to influence the firm, the legitimacy of the stakeholder's relationship with the firm, and the urgency of the stakeholder's claim to the firm (**Figure 4**). They have adapted the definition of power as the ability of those who possess power to bring about the outcomes they desire (Salancik & Pfeffer, 1974) and urgency being the degree to which stakeholder claims call for immediate attention. The authors have accepted the definition of (Suchman, 1995) stating that legitimacy can be defined as a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions.

The authors of Mitchell et al. (1997) argue that it is the third stakeholder attribute or criteria, urgency that leads to the stakeholder management model moving from being static to being dynamic. They quote the Merriam-Webster dictionary, defining urgency as calling for immediate attention, and propose that it exists only when two conditions are met: when a relationship or claim is of a time-sensitive nature, and when that relationship or claim is important or critical to the stakeholder. They also claim that urgency itself is based on two attributes: time sensitivity, defined as the degree to which managerial delay in attending to the claim or relationship is unacceptable to the stakeholder, and criticality, meaning the importance of the claim or the relationship to the stakeholder.

Mitchell et al. (1997) argue that the importance of paying attention to a certain stakeholder depends on the number of attributes that this stakeholder possesses, with the most important stakeholders possessing all three attributes, and the least important possessing none. They also propose that stakeholders acquire and lose these attributes, and therefore their level of

importance along the different phases of a project, making stakeholder salience, and in turn the stakeholder management process, a dynamic and unstable one.

Although Mitchell et al. (1997)'s work can arguably be considered one of the cornerstones of the stakeholder management literature, but it is not without critics. (Aaltonen et al., 2015), for example, point out that, while the salience framework has been applied in empirical research, serious attempts to operationalize and create robust measures of salience attributes have been quite limited (Neville, Bell, & Whitwell, 2011). The authors also mention the facts that many of the applications and empirical tests for the model consider only the simple absence or presence of the three attributes: power, urgency and legitimacy (Neville et al., 2011), and that Mitchell et al. (1997) themselves have noted that even though their framework considers each attribute as "present or absent," stakeholder attributes function as variables operating upon a continuum, not as steady state/dichotomous and can change for any particular group or stakeholder-manager relationship.

Stakeholder influence and opposition can be considered either drivers or ramifications of stakeholder dynamics, where stakeholders tend to show their Power and express their Interest. Different influence strategies by stakeholders are discussed in the next sub-section.

2.5. Stakeholder Influence and Opposition

Stakeholders have shown that they can demonstrate their opposition, according to the magnitude of their Power over the project decision making process, as well as the perceived damage that they expect the project execution or implementation can have on their own interests, and their control over certain resources (Aaltonen & Kujala, 2010), across the different stages of a project. The actions taken by stakeholders include, and are not limited to, the representatives of certain stakeholders filing complaints and appeals to the different levels of relevant authorities (Olander & Landin, 2005), requesting a construction or infrastructure project to be relocated (Aaltonen & Kujala, 2010), using and forming alliances with the media to express their opinions and expectations (Olander & Landin, 2005) or to influence the authorities and the project's customers (Huse, 1998), electing reputable representatives (Aaltonen & Kujala, 2010) as well as strengthening rumors about a project and its influence on the environment or the surrounding residential area (De Schepper, Doods, & Haezendonck, 2014).

It has so far been observed that in many cases, internal stakeholders – within the organization or the company responsible for project execution – have shown more aggressive opposition towards innovative and unconventional projects, such as Lean implementation and other

process improvement projects and innovative infrastructure projects (De Schepper et al., 2014; Papadopoulos & Merali, 2008).

On the other hand, commercial infrastructure projects like roads, tunnels, railways, etc. or industrial projects, which suggest larger societal impacts and risks, have faced higher opposition from external stakeholders – those who are not directly affiliated with the project organization – mainly due to the effects it has on the environment like pollution and noise, and directly affecting their daily lives with road blockages, route changes, and early working hours (Huse, 1998; Olander & Landin, 2005). Most of the studies carried out concerning stakeholder dynamics and evolution took place within the construction and infrastructure business sector. It is totally understandable that this might be the case because of the richness and complex nature of the stakeholder environment in this type of projects, making it a promising field with high expectations for new findings. One of the studies that took to the topic of stakeholder dynamics within the construction sector, and from which the Power/Interest matrix used in analyzing the data in this thesis was borrowed, is one carried out by Olander and Landin (2005) studying the attitudes of stakeholders, mainly the residents or the Public residing within the vicinity of two construction projects in Lund, Sweden.

It has been shown how the residents living in the surrounding area of one of the projects started defending the nature and image of their neighborhood, through different stages of appeal, while the municipality had been supportive of the project in its early phases, but started having second thoughts later on, after the growing concerns about the effect of the project on the cultural and historical image of the city (Olander & Landin, 2005).

On the other hand, the railway project that was investigated by Olander and Landin (2005) displayed how project managers could lose their Power by acting reactively, instead of proactively, and how the lack of information could lead stakeholders to increase their opposition, through legal means, and in turn increase their Power over the project. Almost the same escalation was displayed in the case discussed by Aaltonen and Kujala (2010), where some of the residents started forming a pressure group to increase their Power over the project after they felt that they were being ignored.

It can be seen on the contrary how in a case that was studied by the authors of Aaltonen et al. (2015) the residents in some municipalities that were considered as alternatives for project implementation had formed non-governmental organizations to oppose project execution, resulting in them losing their salience after an alternate location was decided to host the project.

At a later stage, that stakeholder group was not even considered to hold any stakes at all and was removed from the stakeholder salience/position matrix.

Most project managers and project teams have taken certain measures to defend their projects against such influential actions, either proactive or reactive, such as presenting the different alternatives to the actual project and comparing them to prove that the actual project was the best option (Olander & Landin, 2005), communicating the benefits of the project to the affected stakeholders in the implementation premises through information desks and leaflets (El-Gohary et al., 2006), allowing stakeholders time to experience the project and realize how it can be effective to improve their daily routines (Papadopoulos & Merali, 2008), as well as keeping the stakeholders included and informed from the early stages of the project – Conceptualizing and Planning – and taking their input and concerns into account during design and implementation, with the last being one of the most effective strategies (Aaltonen et al., 2015).

Despite the effort invested with the aim of satisfying the unhappy influential stakeholders, these oppositions have led to delays in project completion and operation, sometimes for periods as long as years, as well as extensive budget overruns in some of the cases (Olander & Landin, 2005).

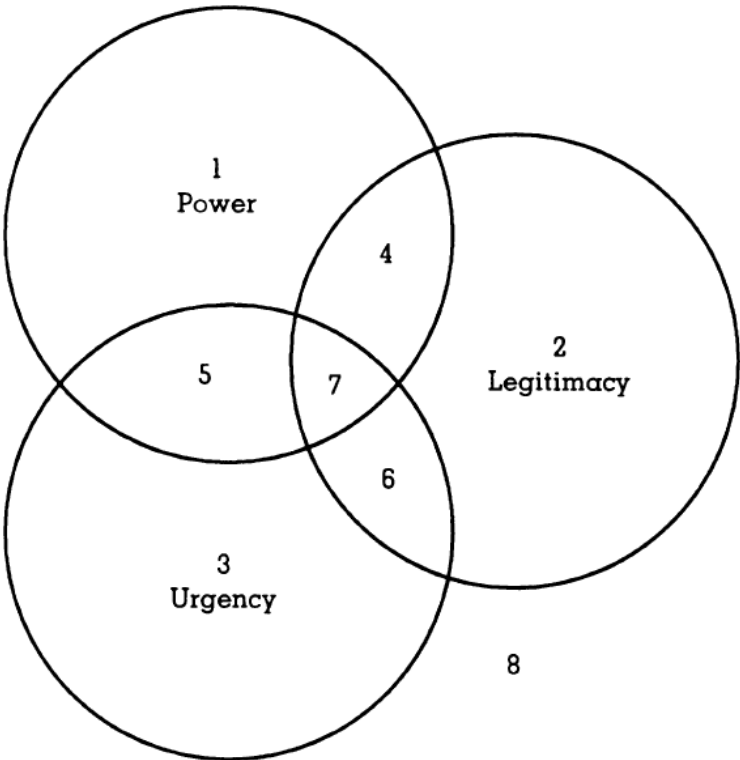


Figure 4 Qualitative Classes of Stakeholders (Source: (Mitchell et al., 1997))

2.6. Contributions and Modifications by Other Researchers

There are authors and researchers who have gone further in depicting and attempting to model and present the concept of stakeholder dynamics but using only two dimensions or attributes instead of Mitchell et al. (1997)'s three attributes of salience and Murray-Webster and Simon (2006)'s stakeholder map, possibly for the sake of simplification and practicality. However, the models that have been encountered so far have all shared Mitchell et al. (1997)'s consideration of power as the main attribute or criteria on which a stakeholder's salience or relevance to the organization is decided based on an assumption that a dynamic stakeholder environment leads to alterations in the bases from which stakeholders derive their power (Olander & Landin, 2005). However, Olander and Landin (2005), for example, have chosen Johnson and Scholes (1999)'s Power/Interest matrix (**Figure 5**), showing stakeholder Interest, defined as the will of the stakeholder to impress their own expectations on a project, as the second dimension that needs to be measured while sketching stakeholder dynamics in the cases they have studied, in addition to stakeholder Power, defined here as the ability of the stakeholder to impress their own expectations on a project. It is to be noted that this is the model that was used in studying stakeholder evolution in this Master thesis.

In the Power/Interest matrix, Power ranges from Low to High on one axis, while Interest also ranges from Low to High on the other axis. After a stakeholder has been identified, they are placed in one of the four quadrants created by the combinations of the different level of power and interest that they are assumed to possess, and the strategy with which they are needed to be engaged to the project or the organization is decided accordingly.

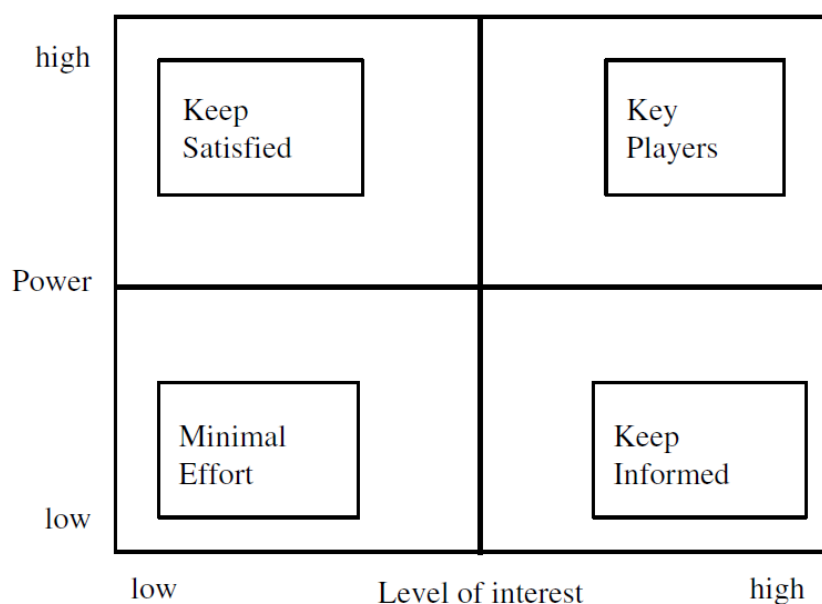


Figure 5 Stakeholder mapping, the power/interest matrix (Source: (Olander & Landin, 2005))

On the other hand, De Schepper et al. (2014), as shown in **Figure 6**, have chosen to use Urgency as the horizontal axis in their model, and propose three different ways of relating to stakeholders based on their positioning on the model: (1) inform, for stakeholder with a low power as well as low urgency (section A); (2) involve, to engage stakeholders with moderate levels of both power and urgency (section B); and (3) collaborate, with the stakeholders who prove to possess high levels of power and urgency (section C).

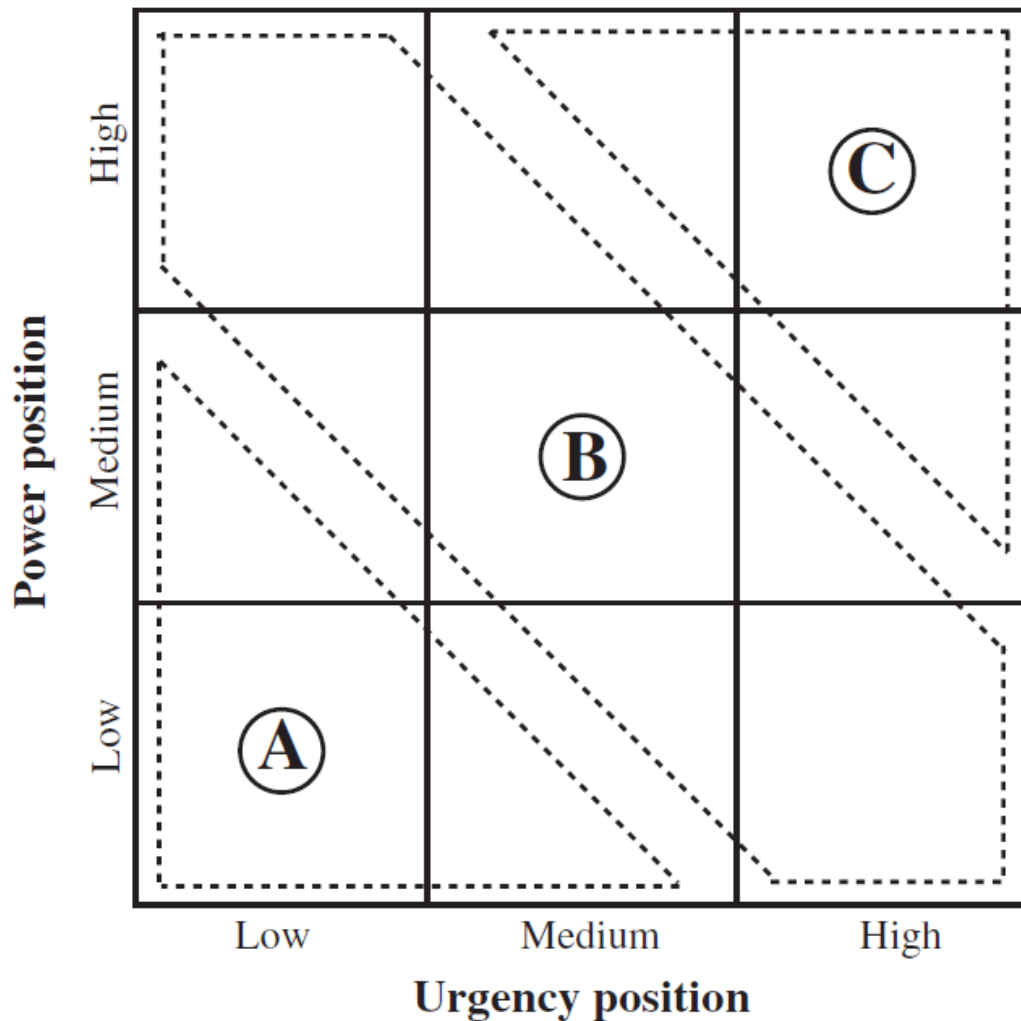


Figure 6 Stakeholder influences identification matrix (Source: (De Schepper et al., 2014))

2.7. The Role of Media

One of the stakeholders that has proved to act as dormant to some extent in its own right (Mitchell et al., 1997), but a very effective one in creating and moving pressure groups is the media, although they cannot really be defined as a stakeholder, because they have no actual stake in the project. However, the media can have a tremendous effect on the project's outcome, both positive and negative. Thus, the media are an important factor that must be considered, which in practice gives them the status of an important stakeholder. (Olander & Landin, 2005)

The strategies employed by the media to influence the decision making process during a the different phases of a project lifecycle, usually in an oppositional way (Olander & Landin, 2005), have included putting pressure on the authorities and influencing the customers (Huse, 1998), exposing projects that might be facing difficulties or delivery delays (Eskerod & Vaagaasar, 2014). The media has also been used by the opposing stakeholders to express their own opinions, as well as prominent local spokespersons, professors, and politicians, giving their views on a project, and increasing the legitimacy of their claims (Aaltonen & Kujala, 2010; Jonker & Foster, 2002; Olander & Landin, 2005).

In some of the cases, it has also been observed that the media usually takes only the side of the stakeholders opposing a project's implementation and execution, covering only the viewpoint of, for example, the residents of a vicinity where a huge infrastructure is being carried out. This usually leads to more pressure and generally a bad reputation for the project (Olander & Landin, 2005).

Dealing with media, therefore, requires a great deal of open and trustworthy communication (Olander & Landin, 2005), and for international projects, being carried out abroad, it can be critical to employ a local media office to communicate the correct information about the project in the local language of the region (Aaltonen & Kujala, 2010).

In the next chapter, Methodology, different research methods will be introduced, which were considered for collecting the data necessary for this Master thesis, along with some of the relevant ideas that came up during supervision meetings. The research questions that shall be discussed will also be introduced, and the steps that were taken before finally formulating them.

3. Methodology

3.1. Research Design

The methodology followed during this Master thesis was split into two parts: a theoretical approach, applying an online web search on stakeholder management, dynamics, and evolution, using different search engines, including Google Scholar, Oria.no, and Web of Science, and obtaining articles from prestigious journals like the International Journal of Project Management (IJPM), Project Management Journal (PMJ), Scandinavian Journal of Management, etc., to try and find the most relevant literature about the topic of project stakeholder evolution and dynamics, and an empirical research method based on data collected through an online survey, followed by processing the collected data using Microsoft Excel and some of the formulae embedded in it like AVERAGE(), MAX(), ABS() and CORREL(),.

While formulating research questions that would be answered through the thesis, it was so hard to come up with the right focus and manage the scope of research. This has most likely been due to the variety of approaches that could have been taken, as well as the ambiguity and diversity of definitions that were encountered during the first look at the previous works of other researchers. However, as the reading process went on, and during the brainstorming sessions that took place during the supervision meetings, more concrete focuses and scope dimensions were decided.

The different possibilities that were considered while trying to come up with the research questions included focusing on the stakeholder dynamics across the various stages of a project's lifecycle, with no regards to any other factors that could possibly be affecting it. These factors that were considered were the size of the project in terms of the financial resources or budget committed to it, the sector to which the project belongs to, and the duration of the project from when the Conceptualizing stage started until Completion and Closing. Although most of these factors were included in the survey, just because it had to be sent out as early as possible in the process in order to collect as much data as possible within the time framework, and in case the size of this data would be so big that it would require so much time than available to analyze, it was then decided to include only the type of project as the main factor behind the dynamics of various stakeholder groups.

The first and foremost research question that will be tried to answer here is which stakeholders display the most dynamics within the projects and which are the most static, as well as trying to figure out the most and least powerful, and the most and least interested stakeholder group engaged in projects from each business sector. Due to the lack of data available, where the

survey did not contain any open questions where the respondents could provide us with specific reasoning or logic behind the dynamics of each stakeholder, only assumptions and reflections could be provided regarding this matter, which could possibly be argued against should more data be available in the future.

The second research question that this thesis will try to answer is how the stakeholder dynamics work during the project after the front-end phase. This area of research was suggested by Aaltonen et al. (2015), and seemed to be extremely relevant to the scope of the thesis. However, in their journal article, Aaltonen et al. (2015) discussed the aspects of stakeholder dynamics in the front-end phase of nuclear waste management projects, while in this thesis, because no responses to the survey were received from any representatives within the nuclear sector, stakeholder dynamics is being observed and discussed across projects from other, more commercial, sectors, namely Construction/Infrastructure, Healthcare Services, Research and Development (R&D), Information Technology (IT), and Oil and Gas.

The next research question discussed here is whether stakeholders could possibly demonstrate certain dynamics depending on the sector that a project belongs to. For example, do the Public have a certain pattern of support or opposition to construction or infrastructure projects, since they directly affect their daily lives on the short and long run? Or do sponsors have higher interest in certain projects that are more profitable or have higher revenues than others?

The fourth and final research question has to do with the relationship between stakeholder environment complexity and stakeholder engagement and inclusion at each phase across the lifecycle of the project, and the same for Power and Interest, and whether one of them could be affecting the other. This discusses whether a high degree of stakeholder inclusion could lead to a more complex stakeholder environment, and vice versa, and whether stakeholders who are given more Power over a project show more interest in it, or vice versa.

Eventually, it was decided to include as many factors as possible, to try and recognize all the possible correlations and influences exerted by the different factors on the dynamics of the various stakeholder groups. This suggested that there would be an enormous and possibly intimidating amount of numerical data to observe and analyze, but due to the potential that the topic had offered, it was decided to carry on with the scope as it was at that point, with no or few limitations.

3.2. Data Collection

Various combinations and synonyms were used while looking for the material that can be used as background for the research, including “project stakeholder evolution”, “stakeholder dynamics”, “project course”, project lifecycle” and the likes. The top results were then filtered, eliminating the least relevant article, by reading through the abstracts and conclusions of each of them, leading to a number of articles that were deemed relevant to the research and contained information that could be built upon.

After thoroughly going through the final articles that were decided to form the base on which the thesis would be built, the most relevant information was extracted, and the research questions were clearer and better constructed, the ideas and the structure of the thesis became clearer, and it was time to start the writing process, beginning with the literature review, then the methodology. These two chapters were chosen to start with since they were, to a great extent, independent from the survey, on whose data the results and discussion chapters were way more dependent.

Although the topic proved to be very uncommon among researchers, where the number of relative literature was relatively low, a paper that was suggested by the supervisor (Olander & Landin, 2005) was very worthy and valuable as a starting point. It included a very useful introduction to the topic, as well as the use of the Power/Interest matrix (**Figure 5**), which would later inspire the Power/Interest matrix (**Figure 7**) employed in the empirical research part of this very thesis. Additionally, its list of references included a number of titles that seemed to be relevant in the search for literature, and some of them were eventually read and analyzed during the literature review.

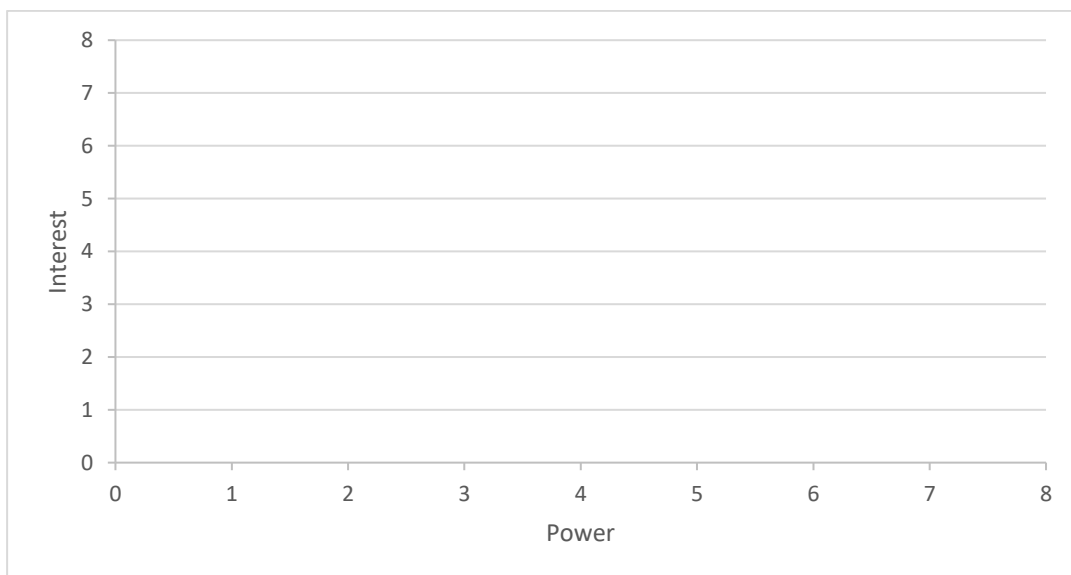


Figure 7 Power/Interest Matrix

In order to develop the results for this Master thesis, several methods of collecting information were considered, including personal interviews, which for different reasons, was eliminated. One of the reasons is the relatively short timeframe allowed for the thesis, in addition to the possible difficulty to meet with organization representatives due to their busy schedules.

Information collection through phone interviews was also kept in mind, but due to the possibility of the interviewee having to review certain documentation from their own archives, and the limited ability to do that during a relatively short phone call, this method was also one of the least favored.

Eventually, it was decided to use an online closed-question survey (Fink, 2003), using Google Forms, which seemed to be the most conventional way to collect the necessary data for many reasons: Google servers are reliable, meaning a very small chance of data loss or failed delivery, Google Forms offers a summary of the results obtained from the responses, offering more time for analysis, and finally it is very user friendly and straight forward, which makes it more inviting to the recipients to take the time and respond to it.

The link to the online survey was sent in an invitation email (**APPENDIX A**), along with guidelines to follow while responding to the survey. These guidelines included a request to only consider the last completed project that the respondent or their organization were part of, to make sure that they have the necessary information and documentation needed to answer the questions included in the survey. Included were also definitions for the words “power” and “interest” (Olander & Landin, 2005) to avoid any personal interpretations that might result in misleading responses.

The recipients were also requested that if they saw a stakeholder in the list of stakeholders included in the survey that was represented by them or their organization, then they should not rate that specific stakeholder. This guideline was placed there as an attempt to avoid any bias that might come up by stakeholders rating themselves. However, upon reviewing the responses, it was realized that the recipients who have submitted their responses to the survey had not really considered that point while answering the survey questions, which resulted in all the stakeholders from each response being rated and placed on the power/interest map, and therefore, the impossibility of assuming the identity of the respondent and which stakeholder group they belong to, which would have, to a great extent, helped to figure out any commonalities between the perspectives of stakeholder groups.

After being developed using Google Forms and the format approved by the supervisor, the survey was sent out on the 8th of February 2018 by a representative of the Department of

Mechanical and Industrial Engineering (MTP) to representatives of the partner companies of Prosjekt Norge, whose number was hard to be estimated, along with a request to respond to the survey within three weeks from the date they had received the invitation. In addition, five days later, on the 13th of February 2018, a link to the survey was published by the Project Management Institute (PMI) on their website, with a deadline of the 17th of March 2018.

The survey was divided into five parts: general questions, requesting that the respondent answers three obligatory questions about the project type or the sector to which it belongs, the choices being Oil and Gas, Infrastructure, Research and Development (R&D), Information Technology (IT), Healthcare Services, or Other, with the need to specify for the last one, the second question requiring a respondent to specify the size of the project they are using as reference based on budget, and the last general question requiring the respondent to indicate the duration of the project. These questions were all multiple-choice questions (MCQ).

The rest of the survey was divided into four parts, aligning with the four phases of projects (Khang & Moe, 2008), and requiring the respondent to rate both the complexity of the project stakeholder environment and the level of inclusion and engagement displayed by the project manager and the project team towards the different stakeholder representatives and groups during the decision-making process of each phase.

Along with the questions about rating complexity and inclusion, the set of questions about each phase included a list of stakeholders, mainly inspired by the work of Davis (2014), with minor modifications, done to make it relevant to the Norwegian context, where the respondents were asked to rate each stakeholder on a scale from 1 to 7 as to how they think their Power over the decision-making process during that specific phases could be rated, as well as their Interest in influencing the decision-making process during the same phase.

Since the words “Power” and “Interest” could be slightly ambiguous, even to professionals, due to the variety of their experiences and backgrounds, it was thought best to provide unified definitions of these two words (Olander & Landin, 2005), in order to avoid any misunderstandings or misinterpretations of the keywords that were vital and crucial to obtaining and analyzing the results.

After the deadline for responding, the total number of respondents was 12, which was most likely due to the database of participants in Prosjekt Norge being slightly out of date, with contact people moving to work in other companies and organizations, and therefore losing their working emails, to which the survey invitation was sent. Another possible reason could be some respondents just deciding to wait until the deadline drew closer and then submitting their

responses, but then losing the invitation email among the emails arriving to their inboxes, or simply forgetting or ignoring it. However, the timeframe was tight, and there was no chance of going back to modify or alter the data collection method, so it was decided to move on with what was available, and proceed with analyzing the collected data.

3.3. Data Analysis

After concluding the data collection phase using the survey, the step of data presentation and analysis commenced. With all the possibilities and various ways of combining the data to answer different aspects of the research questions, it was not an easy task to decide how to present the data, or what amount of it would need to be included. That was why a supervision meeting was held to have a brainstorming session and think of the best approaches possible that could be taken in order to utilize the data in a way that would serve to answer the research questions.

One of the advantages that were recognized during that meeting was that using Google Forms as the tool to collect the data through the survey had to a great extent paid off, since Google Forms had already provided some graphs and pie-charts, that could be used to analyze and discuss the data. These graphs and charts were carefully revised and repurposed in order to be more relevant to the thesis.

Although the initial data sheets generated by Google Forms could have been useful, the flow of data and the way they were presented was a little bit confusing and not as well-organized as expected. That is why a re-organizing into a separate Excel file was needed. The answers and scores provided by each respondent were clustered and collected together, as well as the dynamics of each stakeholder from each of these respondents plotted on the Power/Interest diagram. This eventually gave 120 graphs, showing the dynamics experienced by each stakeholder in each project.

In addition to that, a correlation diagram was plotted between the complexity of the stakeholder environment and the inclusion of stakeholders into the decision-making process for each project. This resulted in 12 more graphs being plotted. Also, a cumulative graph with all the scores for complexity and inclusion was plotted, to find the general correlation factor between these two factors across all the phases of all the projects included in the study.

Since the process of observing the dynamism across the stakeholders across the different phases and projects could possibly be a tricky one, and the outcome could differ from one observant to the other, all the output data was therefore quantified into numbers and averages, in order to make the findings more accurate. The difference in Power and Interest across the whole

lifecycle of the project, for each stakeholder, ΔP and ΔI , were calculated, where ΔP is the sum of the absolute differences between the Power of a certain stakeholder at one phase and the Power of the same stakeholder at the following phase for a certain project, and ΔI is the sum of the absolute differences between the Interest of a certain stakeholder at one phase and the Interest of the same stakeholder at the following phase of a certain project. For example, assuming that we need to calculate ΔP and ΔI for the stakeholder “Project Manager” in Project 1, from Phase 1 to Phase 4, then $\Delta P = |\Delta P_{1-2}| + |\Delta P_{2-3}| + |\Delta P_{3-4}|$, and $\Delta I = |\Delta I_{1-2}| + |\Delta I_{2-3}| + |\Delta I_{3-4}|$. ΔP and ΔI would eventually be used to express the change in Power and Interest of a certain stakeholder throughout the project.

After ΔP and ΔI have been calculated, they would then be summed together in order to give us the total dynamics factor ΔT , where $\Delta T = \Delta P + \Delta I$. The factor, ΔT , is then used as an indication of the dynamism of a certain stakeholder along the course of a project, and the average of all the values of ΔT of a certain stakeholder could possibly help us understand and predict the dynamic behaviors and patterns of stakeholders in the future. It is worth noting, though, that these calculated factors can only be used to indicate the magnitudes of the changes that the stakeholders have shown during the progress along the phases, and not the frequency or the number of these changes. For example, a stakeholder might have had a constant power score of 1 throughout the first three phases, Conceptualizing, Planning, and Implementing, but then that score jumped from 1 to 7 in the Closing/Completing phase, giving them a ΔP of 6, and so on.

3.4. Reliability, Validity and Generalizability

The research for this Master thesis was done by means of a few simple, yet effective tools of data collection. The literature review was carried out through online academic libraries like Google Scholar, Oria.no, and Web of Science, meaning that it is virtually accessible to students and faculty staff who would be interested in carrying out further research on the topic, where the data is sustainable and available at any time and on almost any device with an internet connection.

The numerical data required to answer the research questions was collected by means of an online survey, created using Google Forms, which offers a variety of options and formats to formulate questions. However, no open questions were used, in order to encourage the recipients to provide responses by minimizing the time needed to respond to the survey questions. This did not seem to work out very well, though, where, despite these measures being taken, only twelve responses were completed and submitted.

Although the concept of a survey could be tempting and promising as a method of collecting data, it had its issues. For example, it gave all the freedom to the recipients to whether respond to it or not, with absolutely no guarantee or promise given to the sender of receiving the data they need. This could have been solved through a more personal approach like a short pre-arranged meeting or a phone call. These two approaches could have also solved the issue of the missing data, where a meeting or a phone-call would allow the respondent to elaborate more on their responses and discuss the logic and reasoning behind them. However, this probably would not be a job for one researcher or student, where it requires a very synergetic team that can work on the data collection process in parallel to collect as much data as they need, which could have later been used to deduct correlations and concrete reasoning behind certain phenomena.

Despite such issues, the data collected through the survey was valuable, as it gave a slight insight on how various stakeholders could earn or lose Power, and how a project in a certain business sector could possibly trigger a stakeholder's Interest. This will hopefully help researchers have more understanding of stakeholder behavior at each stage of a project, predict their attitudes, and propose their stakeholder management strategy based on such information. This can be argued against because of the low number of responses, but the risk had to be taken in the hope of receiving more responses, which, in this case, did not happen.

A possible issue that could put the validity of the results at question might be the possible tendency of some of the respondents to never give an extreme rating, either high or low, which could result in some error with the findings. In the case of a high number of responses, this would normally not be a very effective issue, but in the case presented here, it had to be pointed out that such error might be present, with no available way of eliminating it.

Another issue was the way the stakeholder dynamics was represented by numbers, where the numerical representation of total dynamics did not really reflect the visual dynamics that could be seen on the power/interest matrix. For example, a stakeholder might have been deemed as the most dynamic in one of the sectors, because of the numerical calculations, while on the power/interest matrix, it seemed to be only moving between two points, where its Power changed one time, as well as its Interest (**Figure 8**).

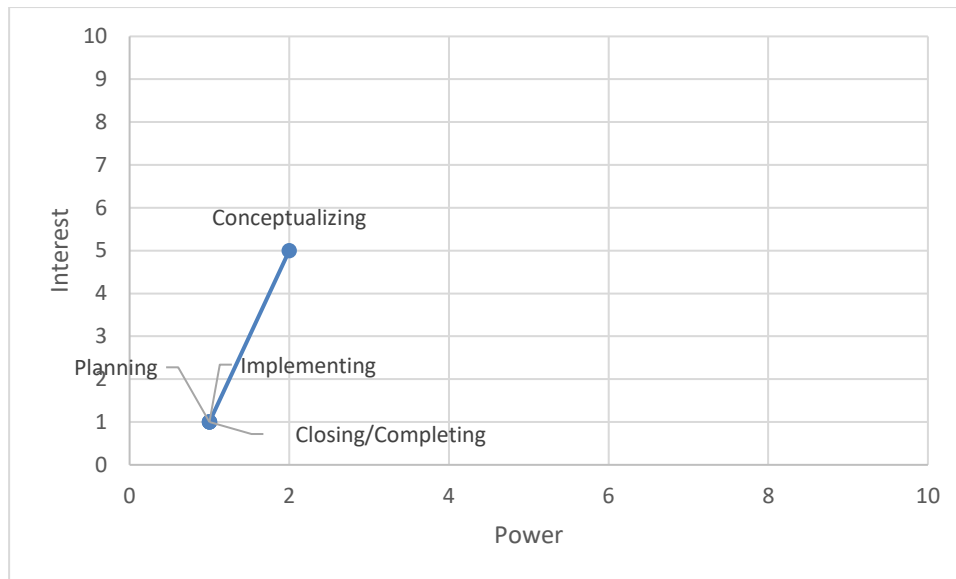


Figure 8 Municipality Dynamics in an Oil and Gas Project

On the other hand, the survey offered responses from stakeholders across various industries and business sectors, suggesting that, although the validity of its sectoral results could be questioned, the general results could work as an initial indicator and a tool that could help project managers and project teams in different contexts. In other words, it could be a starting point which, through their experience and contextual differences, they can modify and improve. It is then safe to assume that the tools and techniques used in developing this Master thesis can be utilized for various contexts and in various geographical locations other than Norway, with the necessary modifications and improvements that might need to be done accordingly. This is assumed because a survey in general is not so time-consuming as a meeting or a phone call would be, where it gives the respondents the freedom of choice to complete it at any time, from anywhere and within the time interval they need to assure the accuracy of the data they provide through their answers to the questions.

Although the survey was carried out within Norway, and the Norwegian culture can be considered as unique as any other culture, this must have affected the data collected and the results obtained. This is the results in this thesis can be used as a source of information and learning within Norway, or as an example in other parts of the world, but a different process with necessary improvements and modifications should be carried out prior to carrying out a similar research in another context.

In the following chapter, Findings and Analysis, a part of the findings from the data obtained through the survey shall be presented, along with calculations using the formulae presented in the previous paragraphs. This is done in order to try and answer the first two research questions,

namely which stakeholder groups are the most dynamic and which are the most static and whether those results could apply as general or they differ from one business sector or type of projects to another, and how stakeholder dynamics look after the front-end phase of projects.

4. Findings and Analysis

The Findings and Analysis chapter in this thesis should help understand and hopefully answer the first two research questions, presenting the most, as well as the least, dynamic stakeholder group from each business sector, the most and least powerful, and the most and least interested stakeholder group, in projects from each business sector, and presenting some thoughts and reflections on some of them. The rest of the graphs and tables representing the data from the rest of the stakeholders can be found at the end of the thesis, and the stakeholder groups who were the most powerful or interested in a project (**APPENDIX B**).

In this chapter as well, and in **APPENDIX B**, there should lie the answer to the second question of how stakeholder dynamics work after the front-end phase of a project. It is assumed that the presentation here covers the whole lifecycle of a typical project, from Conceptualizing and through Closing/Completing. It is safe to say that each project is of unique nature and context, but in order to standardize the basis on which the respondents would base their replies to the survey on, it was necessary to find a model that could be of the closest relevance to each and every one of them.

Looking closely at the results obtained from the survey, both graphical and numerical (**APPENDIX B**), it can be observed that some stakeholders have shown a more dynamic nature than others, whether only with respect to their power over the decision-making process, their interest in imposing their will and expectations over this process, or both, along the different phases of the course of projects.

When it comes to the Power dimension, for example, we can see that the stakeholder group that has shown the highest Power average across all project phases and across the different business sectors was Owners/Sponsors. This stakeholder group has shown an average of Power over the decision-making process of 5.8125/7 (**Figure 9**), which seems to be reasonable, due to this stakeholder group being in control of probably the most critical resource, which is the financial resource, without which, virtually no achievement can be reached, or a project implemented or completed. The second most powerful stakeholder group was the Project Managers, which also seems to be reasonable, since a Project Manager is in charge of making decisions related to the project, as well as the assumed high awareness of the conditions surrounding and affecting a project when it comes to resources, stakeholders, financial state, etc. The Project Manager stakeholder group had an average Power score of 5.104167/7, followed by Senior Management at 4.9375/7. The value of the average Power for each stakeholder group was calculated by summing up the Power score that the stakeholder group had earned in all four phases, and across

all twelve projects, and dividing that value by their number. Calculating the average Power for the Owner/Sponsor stakeholder group, for example, took place as follows, and a similar method was used to calculate the Power average in each of the business sectors later on, for each one of the ten proposed stakeholder groups, using their respective values:

$$P_{average} = \frac{\sum P}{n} = \frac{279}{48} = 5.8125$$

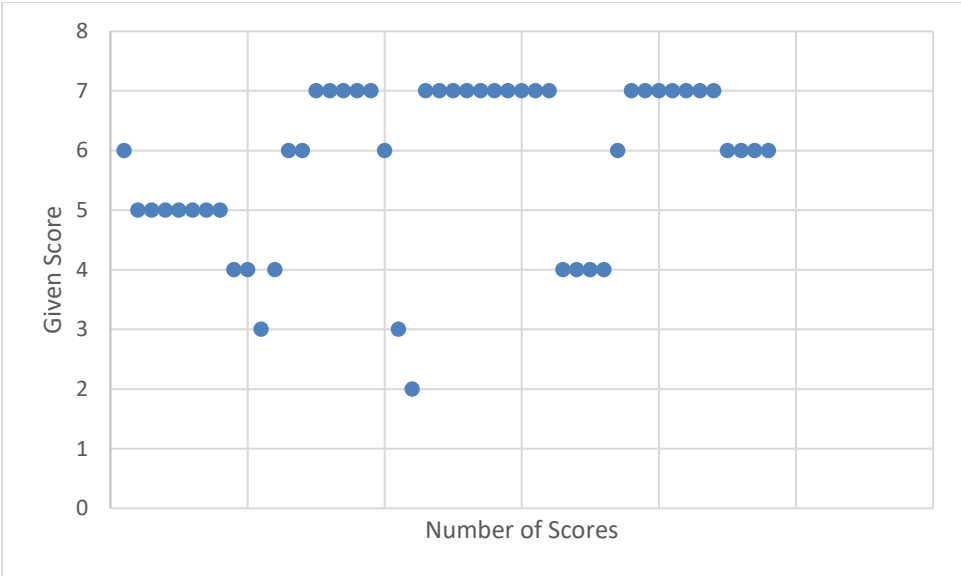


Figure 9 Distribution of Power score for Owner/Sponsor Stakeholder Group

On the other hand, the stakeholder with the lowest average score when it comes to Power over the decision-making process in the course of a project was the stakeholder group of Environmental Activists/Organizations. This could possibly be the case due to their lack of control over any actual stake or resource, at least in the sample of projects from which the data was obtained. This stakeholder group has scored an average Power of 1.729167/7 based on the responses obtained through the survey (**Figure 10**). The second least powerful stakeholder group was the Public, with an average Power score of 1.979167/7, which came as a surprise, since Norway is considered one of the countries with an extremely high awareness level about the environment, and this stakeholder group had been expected to be more effective. Environmental Activists/Organizations came following the Media stakeholder group, which scored an average of Power of 2.20833/7. **Table 1** summarizes the three most powerful and the three least powerful stakeholder groups across all twelve projects.

Table 1 Most Powerful and Least Powerful Stakeholder Groups

Stakeholder Group	Average Power
Owner/Sponsor (Most Powerful)	5.8125
Project Manager	5.104167
Senior Management	4.9375
Media	2.20833
Public	1.979167
Environmental Activists/Organizations (Least Powerful)	1.729167

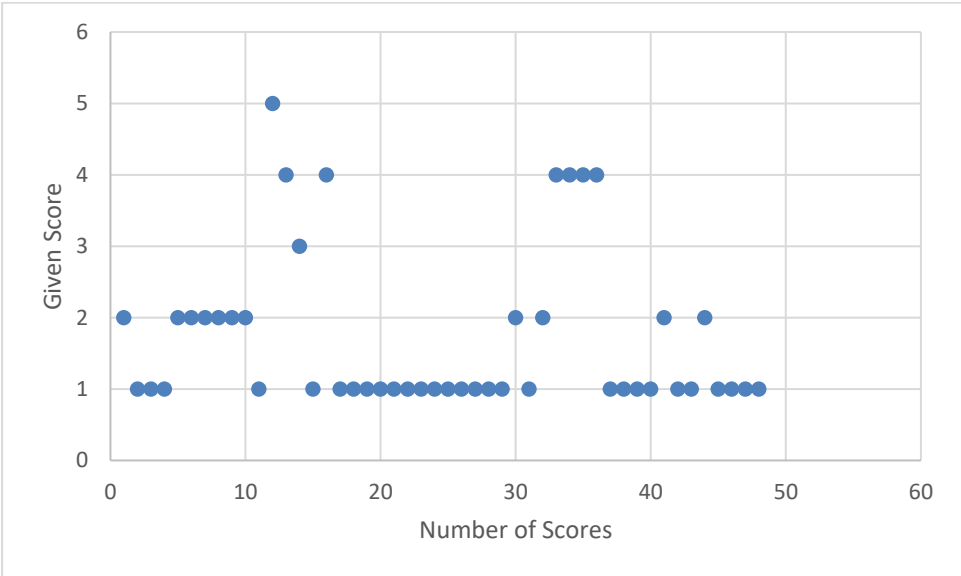


Figure 10 Distribution of Power score for Environmental Activists/Organizations Stakeholder Group

When it comes to stakeholder Interest in imposing their own will and expectations during the decision-making process across the different phases of the project lifecycle, the stakeholder group which has shown the highest value of Interest was the Project Managers. This is probably due to their position as decision makers and the fact that they are the stakeholder group with the highest motivation contributing to the project and the highest will to see it succeed. That is why the average Interest score for this stakeholder group was 6.270833/7 (**Figure 11**), followed by the Project Team stakeholder group at 5.6875/7, which can arguably be due to the project managers transferring their own Interest and motivation to their own team members, and the Owners/Sponsors stakeholder group coming closely behind, with 5.520833/7. This is probably due to their will to make sure that their financial resources are well employed and will result in the highest revenue possible. The Interest average was calculated using the following formula:

$$I_{average} = \frac{\sum I}{n} = \frac{301}{48} = 6.270833$$

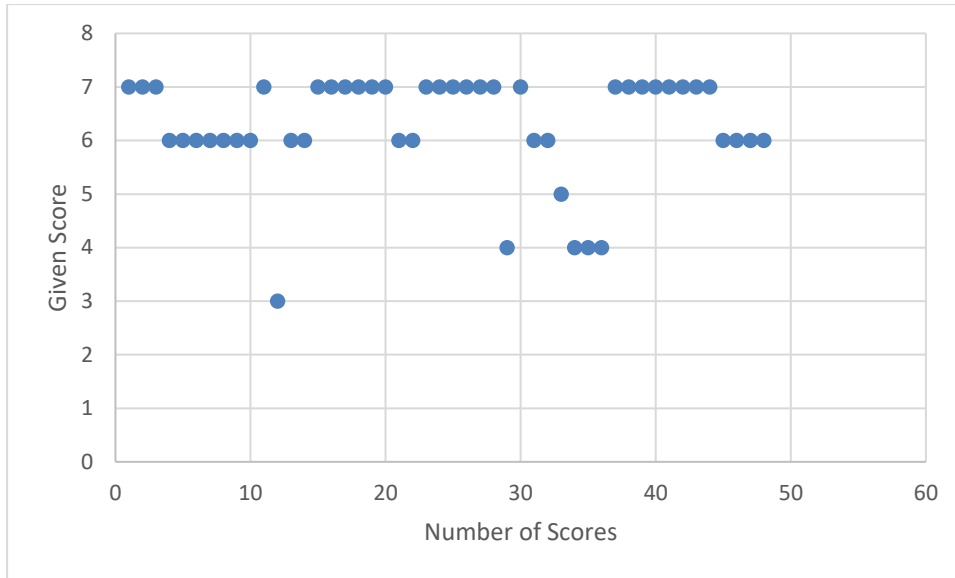


Figure 11 Distribution of Interest score for Project Manager Stakeholder Group

On the contrary, the stakeholder group with the least Interest average was found to be the Environmental Activists/Organizations, with an Interest average of 1.916667/7 (**Figure 12**), preceded by the Public and Municipality stakeholder groups, with Interest averages of 2.208333/7 and 2.479167/7 respectively. The most interested and least interested stakeholder groups, along with their average Interest scores can be found in **Table 2**.

Table 2 Most Interested and Least Interested Stakeholder Groups

Stakeholder Group	Average Interest
Project Manager (Most Interested)	6.270833
Project Team	5.6875
Owner/Sponsor	5.520833
Municipality	2.479167
Public	2.208333
Environmental Activists/Organizations (Least Interested)	1.916667

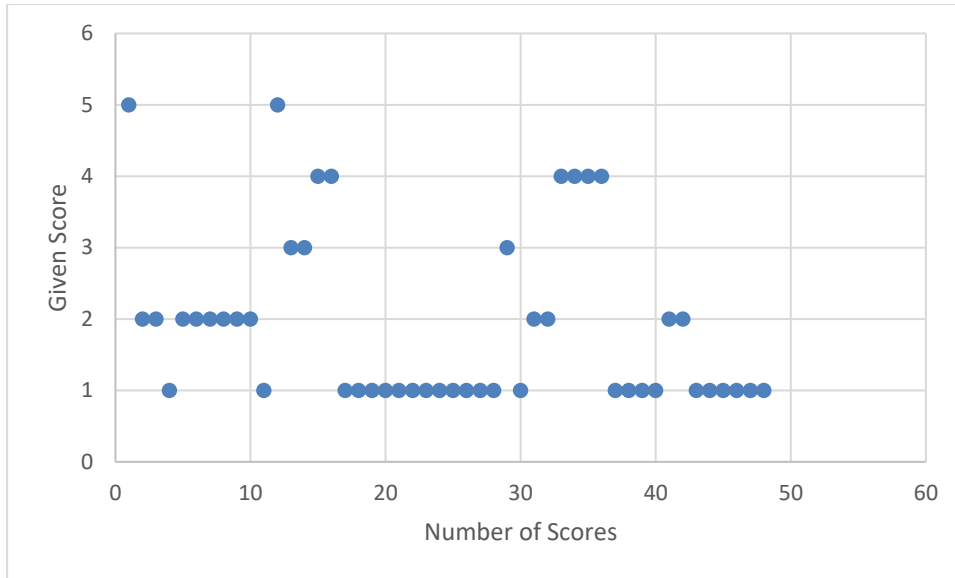


Figure 12 Distribution of Interest score for Environmental Activists/Organizations Stakeholder Group

The dynamics shown by the various stakeholder groups, where they moved from one point to another on the Power/Interest matrix with the start of each of the four project phases, Conceptualizing, Planning, Implementing, and Closing/Completing, was also quantified in order to obtain subjective results. Initially, the stakeholder dynamics with respect to Power and Interest individually was quantified using the formulae mentioned in the Methodology chapter, where the different values of ΔP and ΔI were calculated for each stakeholder involved in each of the projects included in the study.

As mentioned in the Methodology chapter, ΔP , ΔI and ΔT are the numerical representations of stakeholder dynamics, where ΔP is the sum of the absolute differences between the Power levels of a stakeholder from one project phase to the next, ΔI is the sum of the absolute differences between the Interest levels of the stakeholder from one project phase to the next, and ΔT is the sum of ΔP and ΔI . For example, calculating the three values for the Project Manager in one of the responses would go as follows:

Project Manager					
Phase	Power	Interest	ΔP	ΔI	ΔT
Conceptualizing	6	7	$ 6 - 7 $	$ 7 - 7 $	$2 + 1 = 3$
Planning	7	7	$+ 7 - 7 $	$+ 7 - 7 $	
Implementing	7	7	$+ 7 - 6 $	$+ 7 - 6 = 1$	
Closing/Completing	6	6	$= 2$		

The highest Power dynamics were shown by the Project Manager stakeholder group, with an average of dynamics of 2.666667 (**Figure 13**). Generally, this stakeholder group has shown a higher Power in the later phases of projects than in the earlier phases. The second most dynamic stakeholder group when it came to Power over the decision-making process was shared by the Senior Management and Client stakeholder groups, having an average Power dynamics factor of 2.5, followed by the Project Team stakeholder group, with 2.416667. The average Power dynamics of the Project Managers, for example, was calculated as follows:

$$\Delta P_{average} = \frac{\sum \Delta P}{n} = \frac{2 + 0 + 4 + 8 + 0 + 3 + 2 + 3 + 1 + 3 + 4 + 2}{12} = 2.666667$$

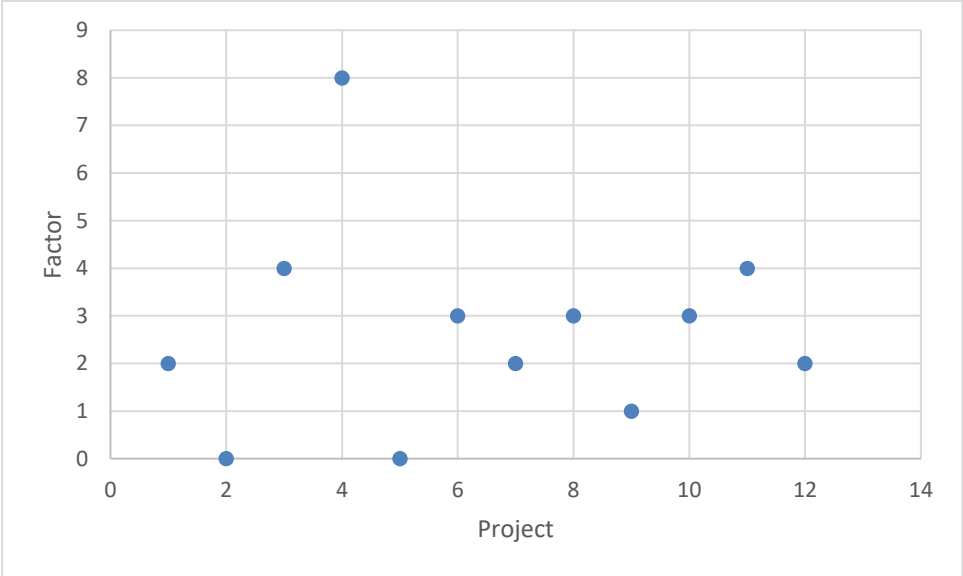


Figure 13 Distribution of Power Dynamics Factor for Project Manager Stakeholder Group

The stakeholder group with the least dynamic nature in terms of Power, however, was the stakeholder group of Environmental Activists/Organizations, with an average Power dynamics factor of 0.916667 (**Figure 14**). This could probably be due to this stakeholder group developing poor strategies to increase their claims and stakes over project resources, which would give them a higher influence. The second least dynamic stakeholder group across the projects, with an average Power dynamics factor of 1 was the Owner/Sponsor stakeholder group. This could be explained by their continuous Interest in project success throughout the whole lifecycle of the project. The stakeholder group following the Owner/Sponsor stakeholder group was the Media, with an average power dynamics factor of 1.25, showing that they also maintain a certain level of Power in projects, in order to keep the spending of financial resources under control. **Table 3** shows the stakeholder groups with the highest, as well as the ones with the lowest, Power dynamics factors.

Table 3 Stakeholder Groups with the Highest and Lowest Power Dynamics Factors

Stakeholder Group	Power Dynamics Factor
Project Manager (Most Dynamic)	2.666667
Senior Management, Client	2.5
Project Team	2.416667
Media	1.25
Owner/Sponsor	1
Environmental Activists/Organizations (Least Dynamic)	0.916667

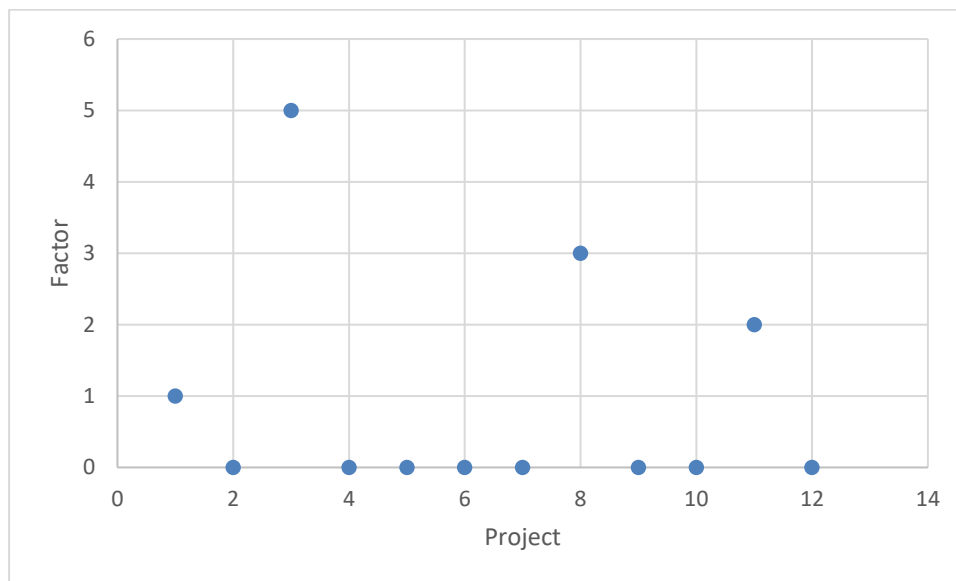


Figure 14 Distribution of Power Dynamics Factor for Environmental Activists/Organizations Stakeholder Group

On the other hand, when it comes to Interest dynamics, the stakeholder group with the highest dynamics factor was the User(s) stakeholder group. It has been observed that in some of the cases, the Interest score given for this stakeholder during the Conceptualizing phase is lower than that given for the Planning phase, which then rises again for the Implementing and Closing/Completing phases. This may be due to the lack of information provided to this stakeholder group during the initial phases of the project, except maybe very limited amounts of information, which makes their Interest very limited, which is then reversed when the project owners and sponsors start promoting the project to its users, increasing the Interest value for the User(s) stakeholder group. The User(s) stakeholder group had an average Interest dynamics factor of 2.5 (**Figure 15**), followed by Senior Management with an average of 2, and the Media and the Public, with a 1.75 average. The Interest dynamics average $\Delta I_{average}$, for example, was calculated as follows:

$$\Delta I_{average} = \frac{0 + 2 + 5 + 1 + 0 + 9 + 1 + 7 + +0 + 0 + 1 + 4}{12} = 2.5$$

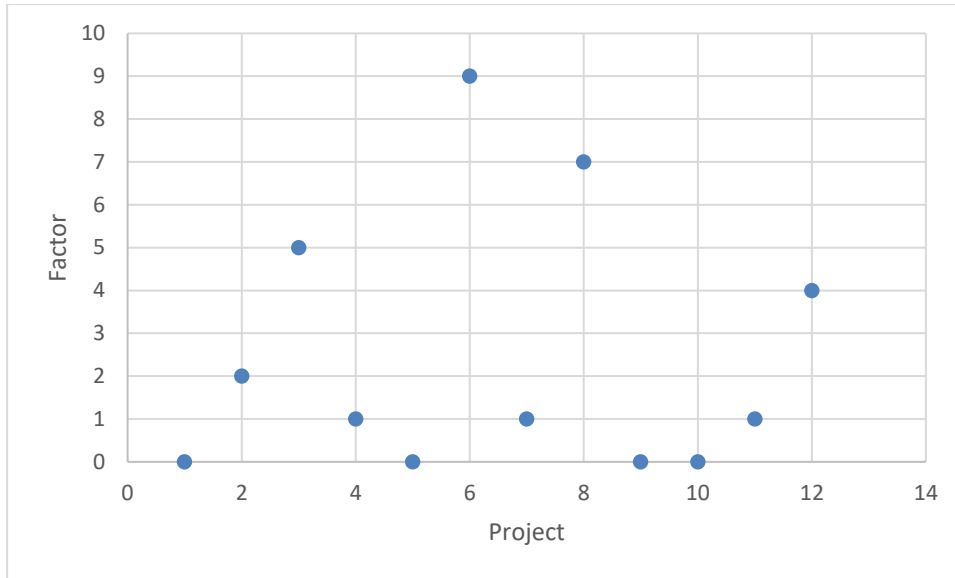


Figure 15 Distribution of Interest Dynamics Factor for User(s)

The Project Manager stakeholder group, however, has shown the lowest average Interest dynamics factor, with 1.083333 (**Figure 16**), which is probably due to this stakeholder group having a stable and constant Interest throughout the whole project lifecycle. After all, a project manager is the final responsible for the deliverables of a certain project being delivered on time, within the allocated timeframe, and with the desired quality. The stakeholder groups with the second most constant Interest, with an Interest dynamics factor of 1.166667 were the Owner/Sponsor stakeholder group and the Environmental Activists/Organizations, preceded by the Municipality stakeholder group, with an Interest dynamics factor of 1.333333. **Table 4** summarizes the stakeholder groups who had the highest and the lowest Interest dynamics factors.

Table 4 Stakeholder Groups with the Highest and the Lowest Interest Dynamics

Stakeholder Groups	Interest Dynamics Factor
User(s) (Most Dynamic)	2.5
Senior Management	2
Media	1.75
Municipality	1.333333
Owner/Sponsor, Environmental Activist/Organizations	1.166667
Project Manager (Least Dynamic)	1.083333

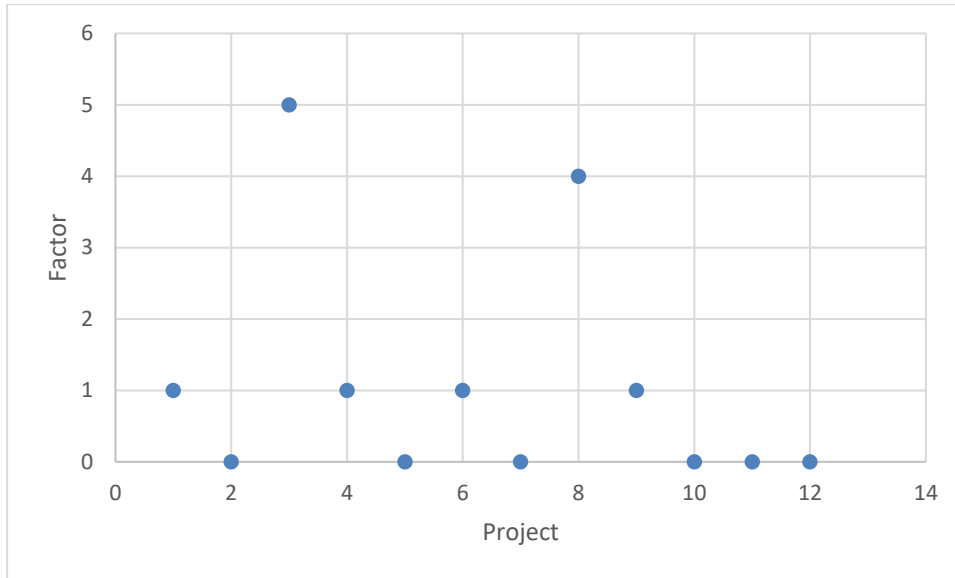


Figure 16 Distribution of Project Manager Interest Dynamics Factor

The final step in this part of the analysis, before going deeper into the data and figuring out the stakeholder dynamics per business sector, is to look at the overall stakeholder dynamics over the Power/Interest grid, and which stakeholder group has shown the highest dynamic nature, and which has shown the lowest.

The total dynamics factor, was calculated by summing up the Power dynamics factor and the Interest dynamics factor for each stakeholder group in each project, followed by finding the average total dynamics factor for the stakeholder group across all the projects. This resulted in the User(s) stakeholder group having the highest dynamic nature, with 4.833333 (**Figure 17**), followed by Senior Management at 4.5 and the Project Team stakeholder group with an average total dynamism of 4. The total stakeholder dynamics factor for the User(s) in one of the responses, and the average stakeholder dynamics for the same stakeholder group across all twelve projects were calculated using the following procedure:

$$\Delta T = \Delta P + \Delta I = 0 + 2 = 2$$

$$\Delta T_{average} = \Delta P_{average} + \Delta I_{average} = 2.333333 + 2.5 = 4.833333$$

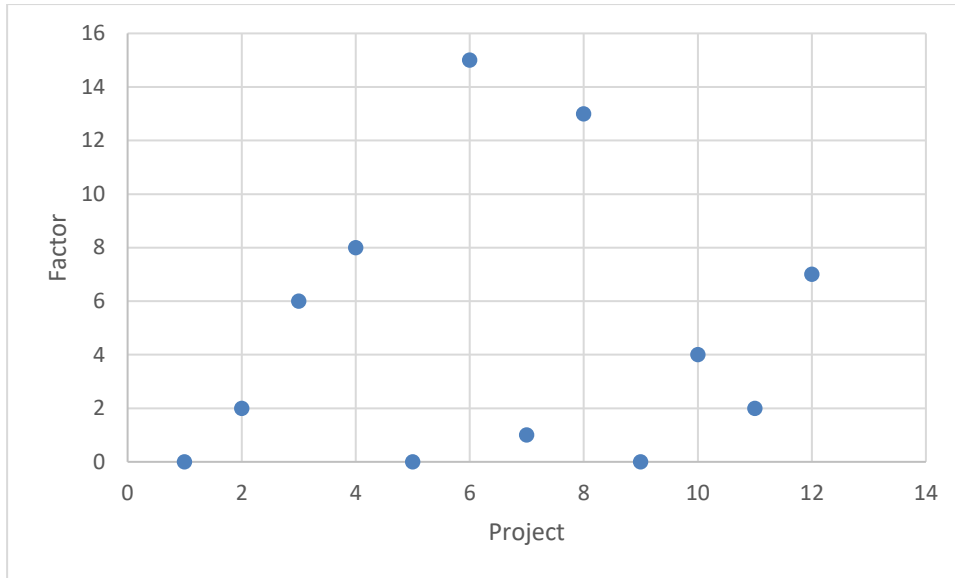


Figure 17 Distribution of Total Stakeholder Dynamics for User(s) Stakeholder Group

On the other hand, the stakeholder group with the least total dynamics average of 2.083333 was the Environmental Activists/Organizations stakeholder group (**Figure 18**), preceded by the Owner/Sponsor stakeholder group, which scored an average total dynamics factor of 2.166667 and the Media, with the total dynamics factor of 3. **Table 5** summarizes the most dynamic and the most static stakeholder groups.

Table 5 Most Dynamic and Least Dynamic Stakeholders

Stakeholder Group	Dynamics Factor
User(s) (Most Dynamic)	4.855555
Senior Management	4.5
Project Team	4
Media	3
Owner/Sponsor	2.166667
Environmental Activists/Organizations (Least Dynamic)	2.083333

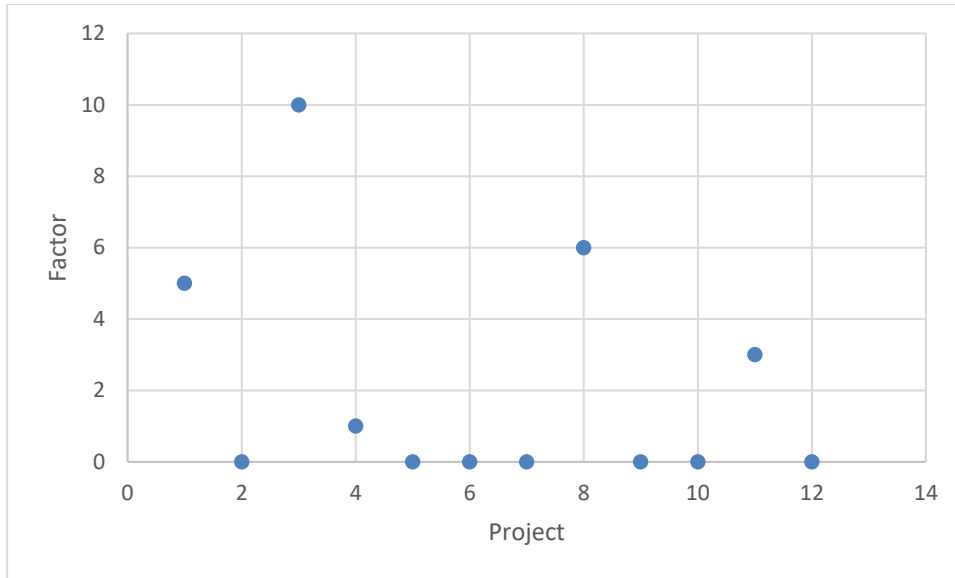


Figure 18 Distribution of Total Stakeholder Dynamics for Environmental Activists/Organizations Stakeholder Group

Going one step deeper into the data collected through the survey, and attempting to figure out if there are certain stakeholders who are more dynamic, or possess more Power over, or Interest in, the decisions made over the course of a project, than others in each business sector to which the projects included in the study belong to, there have been some indications that this is actually the case. Some of these rankings or findings were logical and went in line with the literature findings, while others were not.

4.1. Oil and Gas

The three responses received from respondents representing the Oil and Gas sector, which forms 25% of the total responses received, have shown that the Client stakeholder group has owned the highest Power over the decision-making process of the three projects included in the study, with an average Power of 6.5/7 (**Figure 19**), followed by the Owner/Sponsor stakeholder group, with an average Power of 6.083333/7, and the Project Manager stakeholder group, with an average demonstrated Power of 5.916667/7.

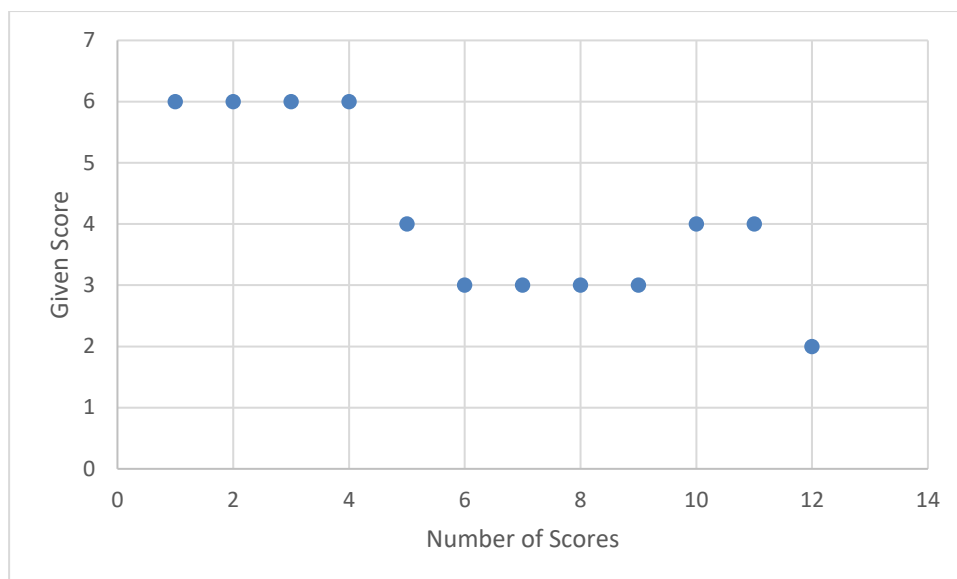


Figure 19 Distribution of Client Stakeholder Group Power in Oil and Gas Business Sector

The stakeholder groups which could be deemed the least powerful in the same business sector, however, proved to be the Public and the Environmental Activists/Organizations stakeholder groups (**Figure 20**), with an average Power of 1.25/7. This came as a surprise, given the assumed influence of environmental organizations in Norway. These stakeholder groups were preceded by the Media stakeholder group and the Municipality stakeholder group, with Power averages of 1.416667/7 and 1.5/7 respectively. **Table 6** shows the most powerful and least powerful stakeholders in the Oil and Gas industry.

Table 6 Most Powerful and Least Powerful Stakeholders in Oil and Industry

Stakeholder Group	Average Power
Client (Most Powerful)	6.5
Owner/Sponsor	6.083333
Project Manager	5.916667
Municipality	1.5
Media	1.416667
Public, Environmental Activists/Organizations (Least Powerful)	1.25

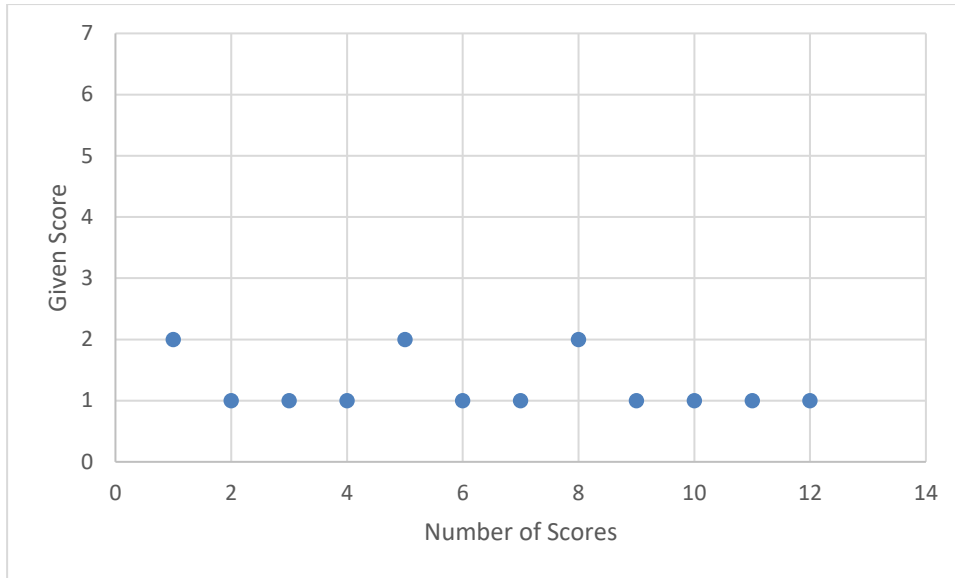


Figure 20 Distribution of Public and Environmental Activists/Organizations Stakeholder Group Power in Oil and Gas Business Sector

Moving on to identifying the stakeholder group with the highest Interest within the Oil and Gas industry, it was found that, with an average Interest of 6.583333/7, the Project Manager stakeholder group has shown the highest Interest among the ten stakeholder groups suggested to the respondents (**Figure 21**). This Stakeholder Group was followed by the Project Team and the Owner/Sponsor stakeholder groups, with an average Interest of 6.083333/7, and then the Client stakeholder group, with an average of 6/7.

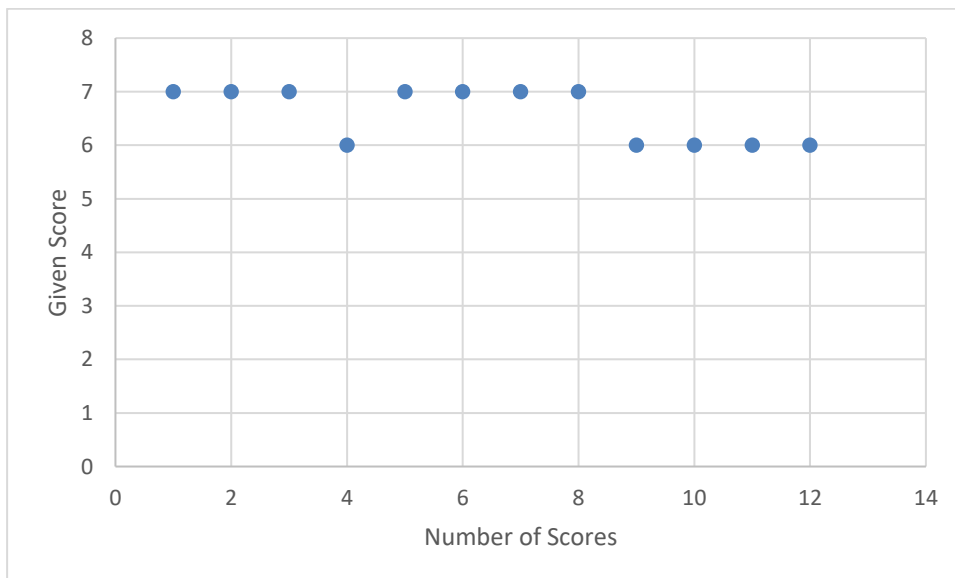


Figure 21 Distribution of Project Manager Stakeholder Group Interest in Oil and Gas Business Sector

On the other hand, the stakeholder group with the lowest Interest in Oil and Gas Projects, with an average Interest of 1.666667, was the Environmental Activists/Organizations (**Figure 22**). Considering the possible impacts that this type of projects could have on the environment in

case certain measures are not taken, it had been assumed that Environmental Activists/Organizations would show a higher Interest in keeping a close eye on these projects, but, as the findings show, that was not exactly the case. The second least interested stakeholder group was the Municipality stakeholder group, with an average of 1.75, and it was preceded by the Public, at 2. **Table 7** shows the most interested and least interested stakeholder groups in this business sector.

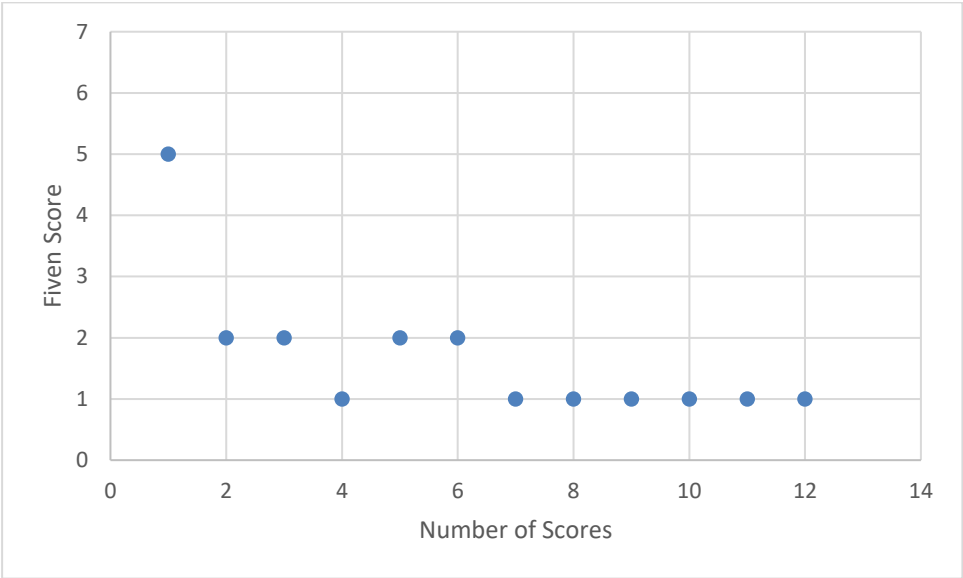


Figure 22 Distribution of Environmental Activists/Organizations Interest in Oil and Gas Projects

Table 7 Most Interested and Least Interested Stakeholders in Oil and Gas Projects

Stakeholder Group	Average Interest
Project Manager (Most Interested)	6.583333
Project Team, Owner/Sponsor	6.083333
Client	6
Public	2
Municipality	1.75
Environmental Activists/Organizations (Least Interested)	1.666667

When it comes to stakeholder dynamics within the Oil and Gas business sector, it has been found that the stakeholder group with the most significant average Power changes from one project phase to the other was the Project Manager stakeholder group, with an average Power dynamics factor of 2.666667, followed by Senior Management, with a 2 average, and the Project Team, Media and User(s) stakeholder groups, all with an average of 1.333333.

On the other hand, the stakeholder group with the least Power dynamics in this business group, having an average Power dynamics factor of only 0.333333, was the Owner/Sponsor

stakeholder group. This shows that the sponsors of this type of projects do not let go easily of their Power over them, due to the high amount of financial resources they invest in them, as well as the high revenue expected from them after completion. The Owner/Sponsor stakeholder group was then preceded by the Municipality and Client stakeholder groups, standing at an average of 0.666667, and the Public and Environmental Activists/Organizations, with an average of 1. **Table 8** summarizes the stakeholders with the highest and the lowest Power dynamics factor averages.

Table 8 Stakeholder Groups with the Highest and the Lowest Power Dynamics in Oil and Gas Projects

Stakeholder Group	Power Dynamics Factor
Project Manager (Most Dynamic)	2.666667
Senior Management	2
Project Team, Media, User(s)	1.333333
Public, Environmental Activists/Organizations)	1
Municipality, Client	0.666667
Owner/Sponsor (Least Dynamic)	0.333333

The most dynamic stakeholder group with respect to their project interest in the Oil and Gas industry turned out to be the Senior Management stakeholder group, with an average Interest dynamics factor of 2.333333, followed by the Public, with an average of 2, and then the Municipality and the User(s) stakeholder, with 1.666667.

The stakeholder groups with the least Interest dynamics, however, were the Project Manager and the Owner/Sponsor stakeholder groups, with an average Interest dynamics of 0.333333, preceded by the Project Team and the Client stakeholder groups, and then the Media stakeholder group, with 1 and 1.333333 averages respectively. **Table 9** shows who the stakeholders with the highest and the lowest Interest dynamics in Oil and Gas projects are.

Table 9 Stakeholder Groups with the Highest and the Lowest Interest Dynamics in Oil and Gas Projects

Stakeholder Group	Interest Dynamics Factor
Senior Management (Most Dynamic)	2.333333
Public	2
Municipality, User(s)	1.666667
Media	1.333333
Project Team, Client	1
Project Manager, Owner/Sponsor (Least Dynamic)	0.333333

Identifying the stakeholder group with the highest overall dynamics in the Oil and Gas industry, it was found that Senior Management came on top, with a total dynamics factor of 4.333333, followed by the Project Manager, User(s) and Public stakeholder groups, with 3, and then then Media and Environmental Activists/Organizations, with 2.666667.

The stakeholder group with the most stable Power/Interest relationship to projects in the Oil and Gas business sector was Owner/Sponsor stakeholder group, with an average total dynamics factor of 0.666667, preceded by the Client stakeholder group with an average of 1.666667, and then the Project Team and Municipality stakeholder groups with an average total dynamics factor of 2.333333. The most dynamic and least dynamic stakeholders from the Oil and Gas industry are summarized in **Table 10**.

Table 10 Most Dynamic and Least Dynamic Stakeholders in Oil and Gas Projects

Stakeholder Group	Total Dynamics Factor
Senior Management (Most Dynamic)	4.333333
Project Manager, User(s), Public	3
Media, Environmental Activists/Organizations	2.666667
Project Team, Municipality	2.333333
Client	1.666667
Owner/Sponsor (Least Dynamic)	0.666667

4.2. Research and Development

Moving to observations from the Research and Development sector, with two responses to the survey, making 16.7% of the total number of responses received, and assuming to include projects of developing electronic products or pharmaceuticals, just to mention a few, the stakeholder group showing the highest Power average was the Project Manager stakeholder group (**Figure 23**), with an average of Power over the decision-making process throughout the two projects included in the study of 6.5/7, followed by the Owner/Sponsor group, with 5.875/7, and the Project Team, with 5.5/7.

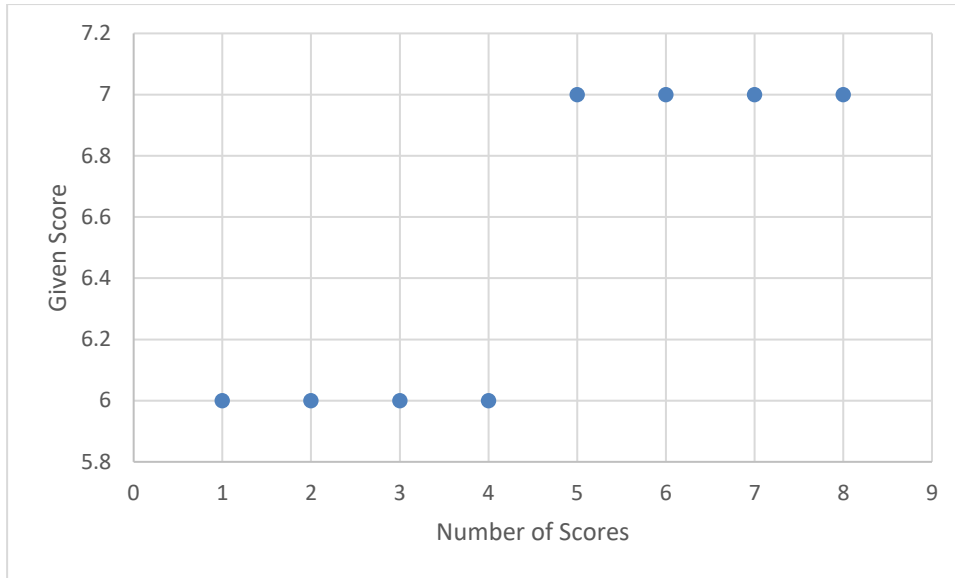


Figure 23 Distribution of Project Manager Stakeholder Group Power in Research and Development Projects

The least influential stakeholder groups in Research and Development projects, however, were the Municipality, Public and Environmental Activists/Organizations stakeholder groups, with an average Power of 1.5/7, getting the exact same scores across all four phases of the two projects included in the study (**Figure 24**), preceded by the Media with a 1.75/7 average, and the User(s) stakeholder group, with an average of 3/7. **Table 11** shows the most powerful and the least powerful stakeholders in Research and Development Projects.

Table 11 Most Powerful and Least Powerful Stakeholders in Research and Development Projects

Stakeholder Group	Average Power
Project Manager (Most Powerful)	6.5
Owner/Sponsor	5.875
Project Team	5.5
User(s)	3
Media	1.75
Municipality, Public, Environmental Activists/Organizations (Least Powerful)	1.5

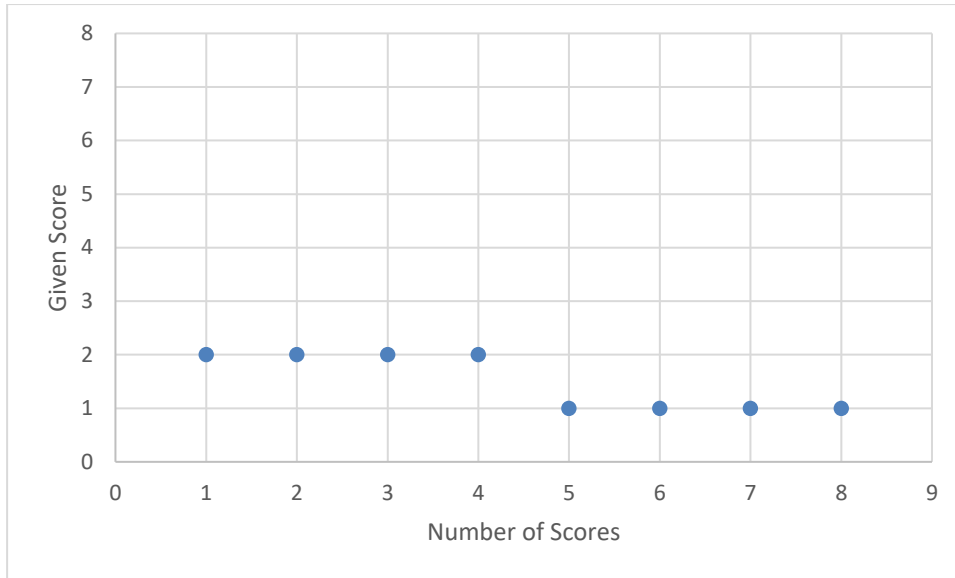


Figure 24 Distribution of Municipality, Public and Environmental Activists/Organizations Stakeholder Power in Research and Development Projects

The stakeholder group with the highest Interest during Research and Development projects was shown to also be the Project Manager stakeholder group, with the same average as in the case of Power, which was 6.5/7 (**Figure 25**), followed again by the Owner/Sponsor stakeholder group, maintaining the same average as in the case of Power as well, which is 5.875, and then the Project Teams with 5.75.

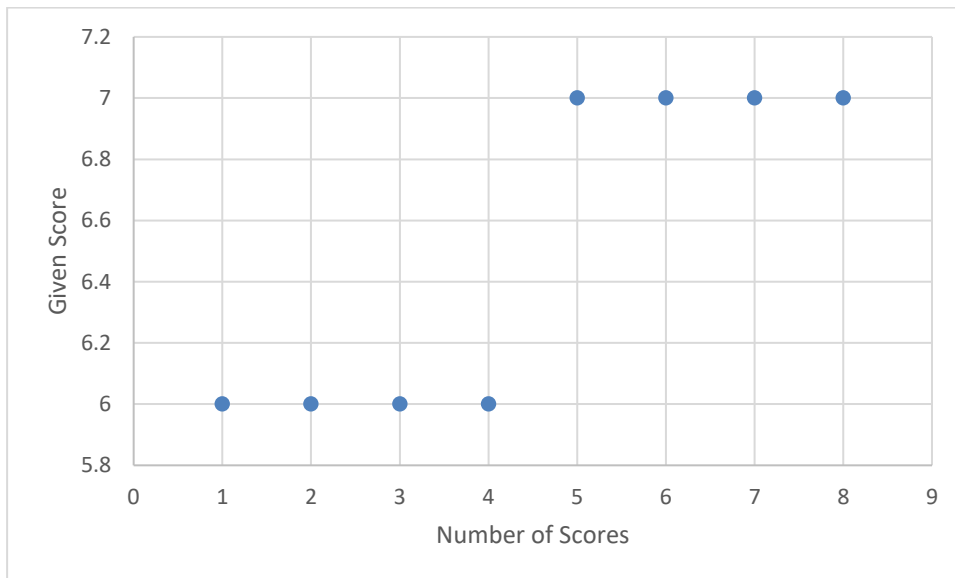


Figure 25 Distribution of Project Manager Interest in Research and Development Projects

The least Interest in influencing decisions during Research and Development projects was demonstrated by the Municipality, Public, and Environmental Activists/Organizations, which was also the case in Power, having an average Interest of only 1.5/7 (**Figure 26**), preceded again by Media, with a 1.75/7 average, and User(s) stakeholder group, with a 2.875/7 average. **Table**

12 summarizes the most interested and least interested stakeholder groups in Research and Development projects.

Table 12 Most Interested and Least Interested Stakeholders in Research and Development Projects

Stakeholder Group	Average Interest
Project Manager (Most Interested)	6.5
Owner/Sponsor	5.875
Project Team	5.75
User(s)	2.875
Media	1.75
Municipality, Public, Environmental Activists/Organizations (Least Interested)	1.5

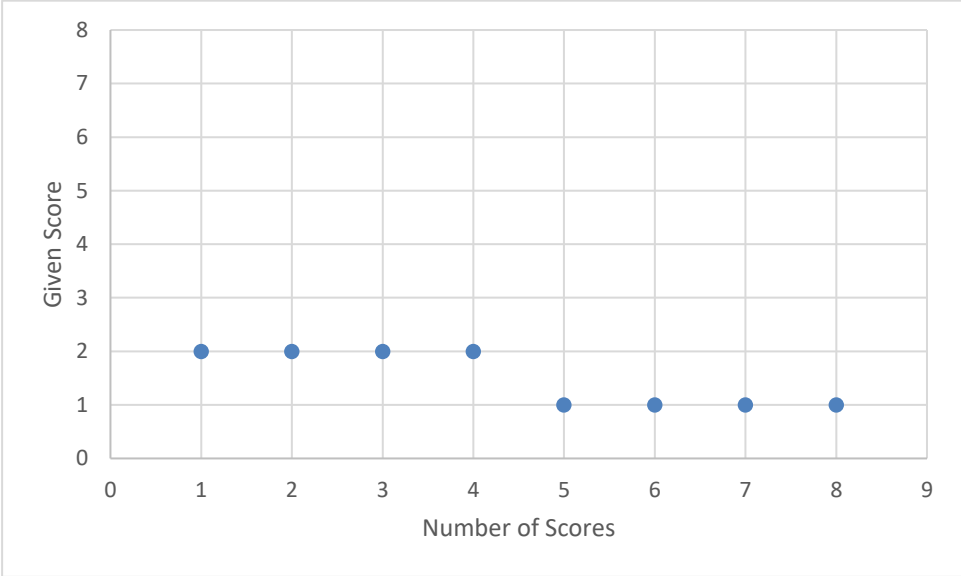


Figure 26 Distribution of Municipality, Public and Environmental Activists/Organizations Stakeholder Interest in Research and Development Projects

Looking at the dynamics in Power of the various stakeholder groups, the stakeholder group with the most dynamics in Power in Research and Development projects, with a Power dynamics average of 3 was the Senior Management stakeholder group. This suggests that Senior Management might allow some autonomy and decision-making power to project managers or project teams, but then they get back to practicing their own power when needed or when they feel that a project is consuming more resources that it is supposed to. The following stakeholder group with the most Power dynamics was the Client stakeholder group, with an average Power dynamics factor of 2.5, and then the Media with 1.

On the other hand, six of the ten stakeholders suggested to be rated by the survey respondents experienced absolutely no Power dynamics in Research and Development projects, with an

average Power dynamics factor of 0. Those were the Project Manager, Project Team, Municipality, User(s), Public, and Environmental Activists/Organizations stakeholder groups, and were preceded by only the Owner/Sponsor stakeholder group, with an average Power dynamics factor of 0.5. The stakeholders with the highest, as well as the lowest, Power dynamics factors in Research and Development Projects are summarized in **Table 13**.

Table 13 Stakeholder Groups with the Highest and the Lowest Power Dynamics Factors in Research and Development Projects

Stakeholder Group	Power Dynamics Factor
Senior Management (Most Dynamic)	3
Client	2.5
Media	1
Owner/Sponsor	0.5
Project Manager, Project Team, Municipality, User(s), Public, Environmental Activists/Organizations (Least Dynamic)	0

In the context of stakeholder Interest dynamics in Research and Development projects, it has been found that the stakeholder groups with the highest Interest dynamics were the Senior Management and Client stakeholder groups, with an average Interest dynamics factor of 4, followed by the Owner/Sponsor at 2, and the Media, and User(s), with an average of 1.

On the other hand, the stakeholder groups with the least Interest dynamics in this type of projects were the Project Manager, Municipality, Public, and Environmental Activists/Organizations stakeholder groups, where they had an average Interest dynamics factor of 0, preceded by the Project Teams at 0.5. A summary of the stakeholder groups with the highest and the lowest Interest dynamics in Research and Development projects can be seen in **Table 14**.

Table 14 Stakeholder Groups with the Highest and the Lowest Interest Dynamics in Research and Development Projects

Stakeholder Group	Interest Dynamics Factor
Senior Management, Client (Most Dynamic)	4
Owner/Sponsor	2
Media, User(s)	1
Project Team	0.5
Project Manager, Municipality, Public, Environmental Activists/Organizations (Least Dynamic)	0

In terms of overall stakeholder dynamics, the stakeholder group with the highest in Research and Development projects was the Senior Management stakeholder group that has shown the

highest overall stakeholder dynamics, with an average of 7, followed by the Client, and the Owner/Sponsor groups, who had averages of 6.5 and 2.5 respectively.

The stakeholder groups with the lowest overall dynamics in Research and Development projects, however, were the Project Manager, Municipality, Public, and Environmental Activists/Organizations stakeholder groups, getting an average dynamics factor of 0, and preceded by the Project Team, and User(s) stakeholder groups, who had averages of 0.5 and 1 respectively. **Table 15** summarizes how the most dynamic and the least dynamic stakeholder groups in Research and Development projects stand.

Table 15 Most Dynamic and Least Dynamic Stakeholders in Research and Development Projects

Stakeholder Group	Total Dynamics Factor
Senior Management (Most Dynamic)	7
Client	6.5
Owner/Sponsor	2.5
User(s)	1
Project Team	0.5
Project Manager, Municipality, Public, Environmental Activists/Organizations (Least Dynamic)	0

4.3. Construction/Infrastructure

Although the two business sectors of Construction and Infrastructure were to be treated separately in the beginning of writing this Master thesis, it was decided later on to merge them together, since these two business sectors in Norway is considered as one. This was also encouraged by the fact that only one respondent from the Construction sector had provided answers to the survey, and it was difficult to rely on it for averages and factors. After merging the responses from the aforementioned business sectors, we then get three responses in the Construction/Infrastructure sector, accounting for 25% of the total responses to the survey.

The stakeholder group with the highest average Power in the Construction/Infrastructure projects included in the study was then identified to be the Owner/Sponsor stakeholder group, with an average Power of 5.666667/7 (**Figure 27**), followed by the Senior Management with an average Power of 4.75/7, and then the Project Team, and the Client stakeholder groups, with 4.5/7. It might be important to note here that the Project Team has a higher average Power over the decision-making process than the Project Manager does.

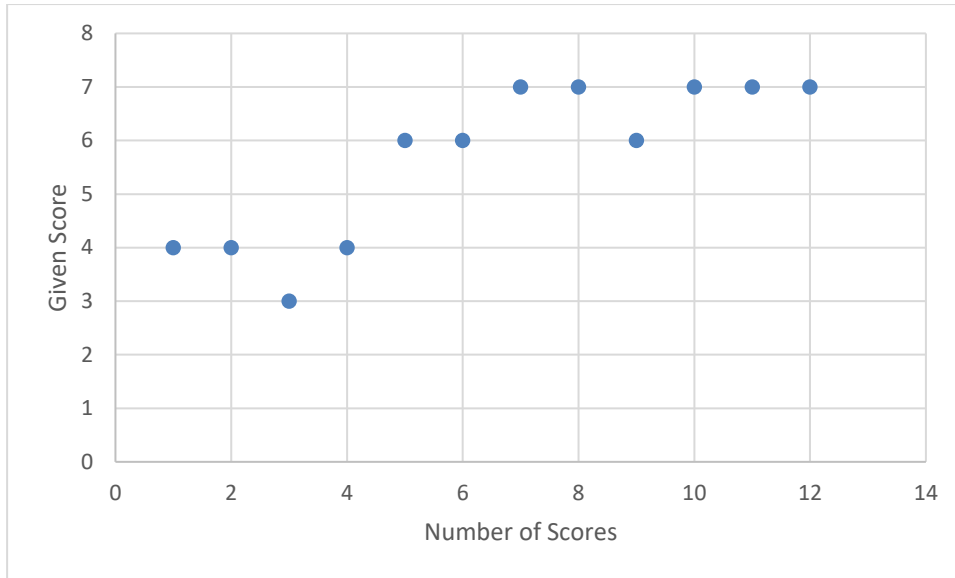


Figure 27 Distribution of Owner/Sponsor Power in Construction/Infrastructure Projects

In the meantime, it was the Environmental Activists/Organizations stakeholder group that exercised the lowest Power over the decisions made in Construction/Infrastructure projects, with an average of 2.166667/7 (**Figure 28**), preceded by the Public, and the Media stakeholder groups, with averages of 2.666667/7 and 2.75/7 respectively. The fact that these three stakeholder groups have shown such low averages of Power came as a bit of a surprise, since they could be assumed to be the most relevant of stakeholders to this type of projects. It can be understood, however, that this might be the case because of the strict regulations that organize the construction works in Norway, leaving no need for other stakeholder groups to stand up and defend their own stakes. The most powerful and the least powerful stakeholders in Construction/Infrastructure projects are summarized in **Table 16**.

Table 16 Most Powerful and Least Powerful Stakeholders in Construction/Infrastructure Projects

Stakeholder Group	Average Power
Owner/Sponsor (Most Powerful)	5.666667
Senior Management	4.75
Project Team, Client	4.5
Media	2.75
Public	2.666667
Environmental Activists/Organizations (Least Powerful)	2.166667

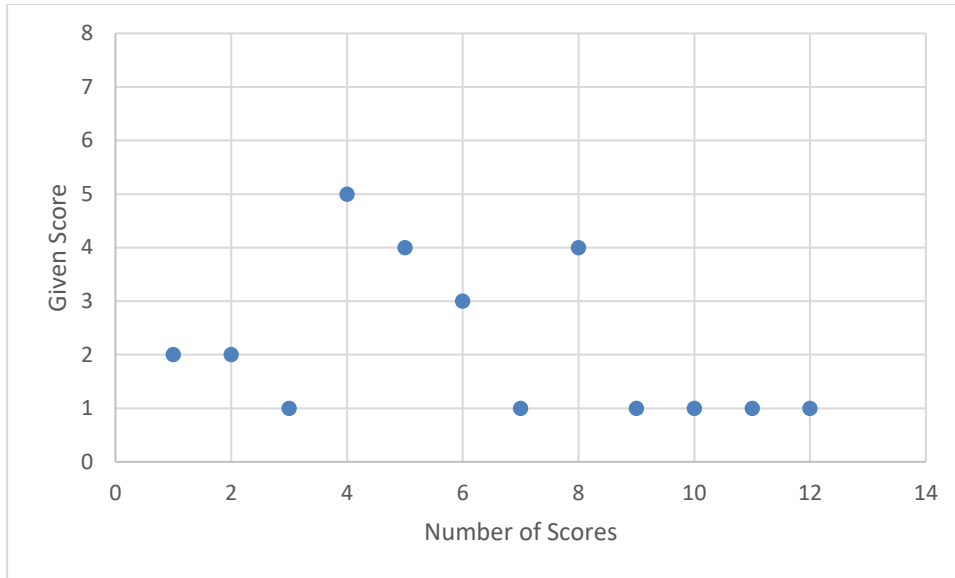


Figure 28 Distribution of Environmental Activists/Organizations Power in Construction/Infrastructure Projects

With respect to the stakeholder groups with the highest Interest, it was the Project Managers who have shown the highest average across all three projects, with 6.333333/7 (**Figure 29**), followed by the Project Team, and the Owner/Sponsor stakeholder groups, with an average of 5.75/7, and Senior Management, scoring an average of 5.5/7. It seems only logical that these four stakeholders would show the highest Interest in such projects, with the significant roles each of them plays; a project manager being the final responsible for the deliverables, along with the team they are leading, senior managers with their decision-making power and weight, and sponsors with their financial resources.

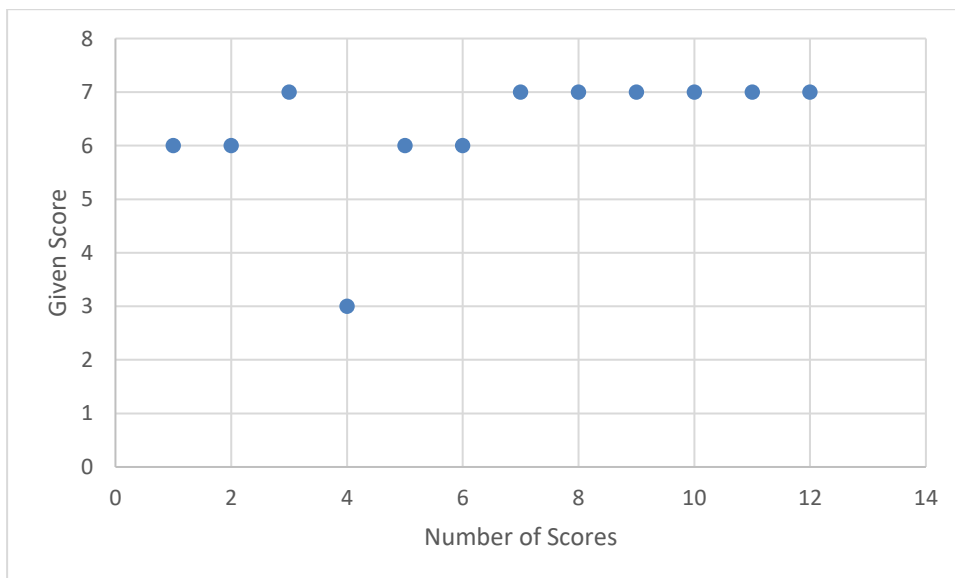


Figure 29 Distribution of Project Manager Interest in Construction/Infrastructure Projects

On the Other hand, it was the Environmental Activists/Organizations who showed the lowest Interest level in Construction/Infrastructure projects, with only 2.333333 (**Figure 30**), preceded by the Public, with average Interest 2.666667, and Media, with the 3.25. **Table 17** summarizes the highest and lowest levels of Interest in this business sector.

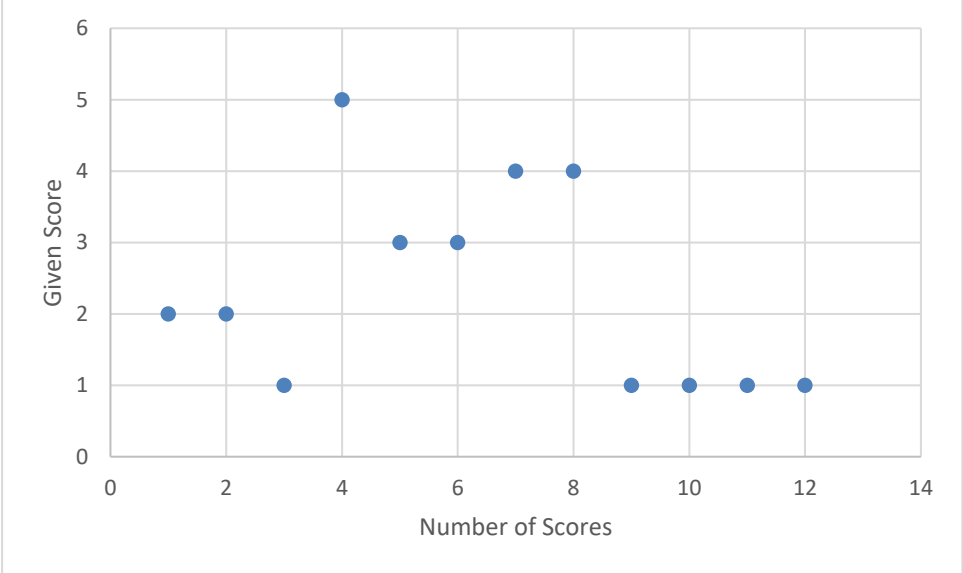


Figure 30 Distribution of Environmental Activists/Organizations Interest in Construction/Infrastructure Projects

Table 17 Most Interested and Least Interested Stakeholders in Construction/Infrastructure Projects

Stakeholder Group	Average Interest
Project Manager (Most Interested)	6.333333
Project Team, Owner/Sponsor	5.75
Senior Management	5.5
Media	3.25
Public	2.666667
Environmental Activists/Organizations (Least Interested)	2.333333

Studying the dynamics of the stakeholder groups involved in Construction/Infrastructure projects, it was seen that the stakeholder group with the highest average Power dynamics factor, 7.333333, was the Municipality, followed by the Clients, with an average factor of 5.333333, and the Project Teams, with 5.

The stakeholder group with the lowest Power dynamics in Construction/Infrastructure projects, on the other hand, was the Owner/Sponsor stakeholder group, with a Power dynamics factor of 1.333333, preceded by the Environmental Activists/Organizations, with an average of 1.666667, and the Media stakeholder group, with 2. **Table 18** shows who the stakeholders with the highest and lowest Power dynamics are, along with their Power dynamics factor averages.

Table 18 Stakeholder Groups with the Highest and the Lowest Power Dynamics in Construction/Infrastructure Projects

Stakeholder Group	Power Dynamics Factor
Municipality (Most Dynamic)	7.333333
Client	5.333333
Project Team	5
Media	2
Environmental Activists/Organizations	1.666667
Owner/Sponsor (Least Dynamic)	1.333333

The stakeholder groups with the highest Interest dynamics in Construction/Infrastructure projects based on the data from the sample were the Project Team, with an average Interest dynamics factor of 3, followed by the Media, Municipality, and Public stakeholder groups, with an average of 2.333333, and then, with an average of 2, the Project Manager, User(s), and Environmental Activists/Organizations stakeholder groups.

The stakeholder groups with the lowest Interest dynamics in this business sector, however were the Client, and the Owner/Sponsor stakeholder groups, with an average Interest dynamics factor of 1, and preceded by the Senior Management group, who had an average of 1.666667. The stakeholder groups who got the highest and the lowest Interest dynamics factors in Construction/Infrastructure projects are summarized in **Table 19**.

Table 19 Stakeholder Groups with the Highest and the Lowest Interest Dynamics in Construction/Infrastructure Projects

Stakeholder Group	Interest Dynamics Factor
Project Team (Most Dynamic)	3
Media, Municipality, Public	2.333333
Project Manager, User(s), Environmental Activists/Organizations	2
Senior Management	1.666667
Client, Owner/Sponsor (Least Dynamic)	1

In the case of overall stakeholder dynamics in Construction/Infrastructure projects, it was the Municipality stakeholder group who had shown the highest dynamics factor, with 9.666667, followed by the Project Teams at 9, and then the Project Manager, and the Public stakeholder groups, with an average dynamics factor of 7.

The stakeholder group with the lowest total dynamics factor, on the other hand, was the Owner/Sponsor stakeholder group, with an overall dynamics factor of only 2.333333, preceded by Environmental Activists/Organizations, who had an average of 3.666667, and Media, with

4.333333. **Table 20** summarizes the most and least dynamic stakeholders in Construction/Infrastructure projects, along with their respective overall dynamics factors.

Table 20 Most Dynamic and Least Dynamic Stakeholders in Construction/Infrastructure Projects

Stakeholder Group	Total Dynamics Factor
Municipality (Most Dynamic)	9.666667
Project Team	9
Project Manager, Public	7
Media	4.333333
Environmental Activists/Organizations	3.666667
Owner/Sponsor (Least Dynamic)	2.333333

4.4. Information Technology

Moving to the Information Technology business sector, two obtained responses have accounted for 16.7% of the total responses received through the survey, it was found that Senior Management had shown the highest average Power average of all ten stakeholder groups, with an average of 6.125/7 (**Figure 31**), where it was followed by the Owner/Sponsor stakeholder group, and its average of 5.875/7, and then the User(s) stakeholder group, with 4.625.

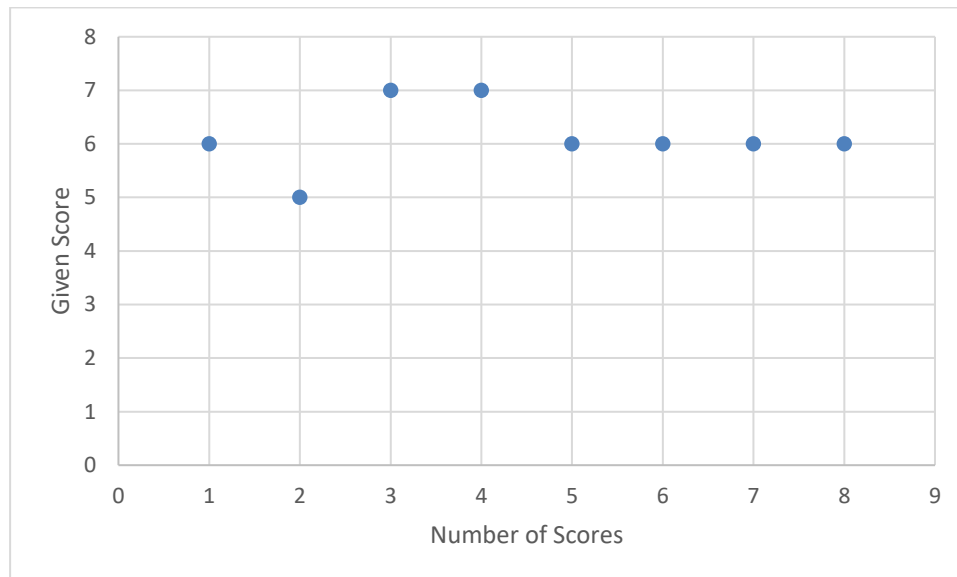


Figure 31 Distribution of Senior Management Power in Information Technology Projects

On the other hand, the stakeholder group with the lowest demonstrated Power was the Environmental Activists/Organizations (**Figure 32**), arguably due to the small significance that this type of projects has toward the environment. This resulted in this stakeholder group having a relatively low average Power of only 1.25/7, preceded by the Municipality, with an average of 1.375/7, and the Media, with 1.625. The stakeholder groups with the highest and the lowest demonstrated Power in Information Technology projects are summarized in **Table 21**.

Table 21 Most Powerful and Least Powerful Stakeholders in Information Technology Projects

Stakeholder Group	Average Power
Senior Management (Most Powerful)	6.125
Owner/Sponsor	5.875
User(s)	4.625
Media	1.625
Municipality	1.375
Environmental Activists/Organizations (Least Powerful)	1.25

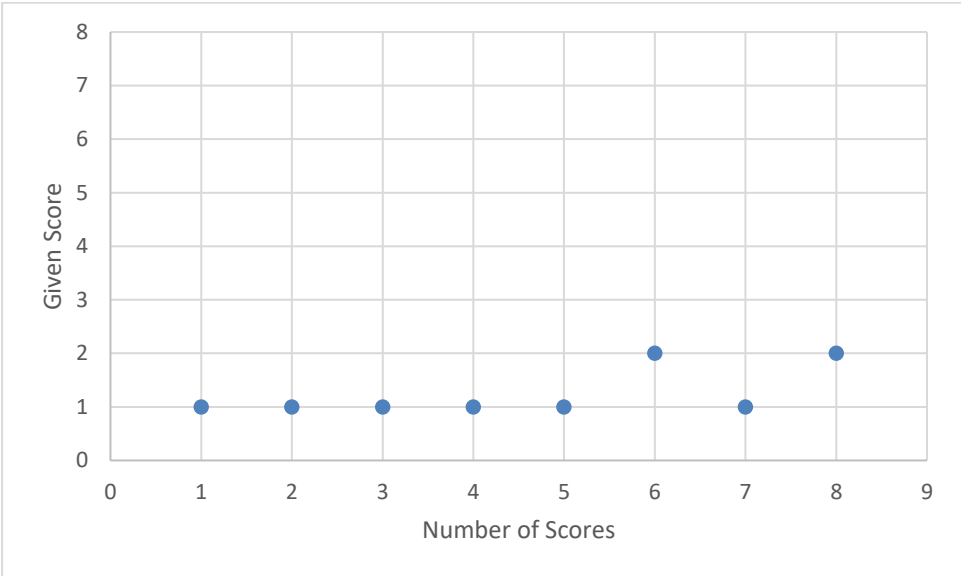


Figure 32 Distribution of Environmental Activists/Organizations Stakeholder Power in Information Technology Projects

The stakeholder group who has shown the highest Interest during Information Technology projects, however, was the Project Manager stakeholder group, also with an average Interest of 6.125/7 (**Figure 33**), followed by the Project Teams and Senior Management, with an average of 5.5, and then the User(s) stakeholder group, with 5.25/7.

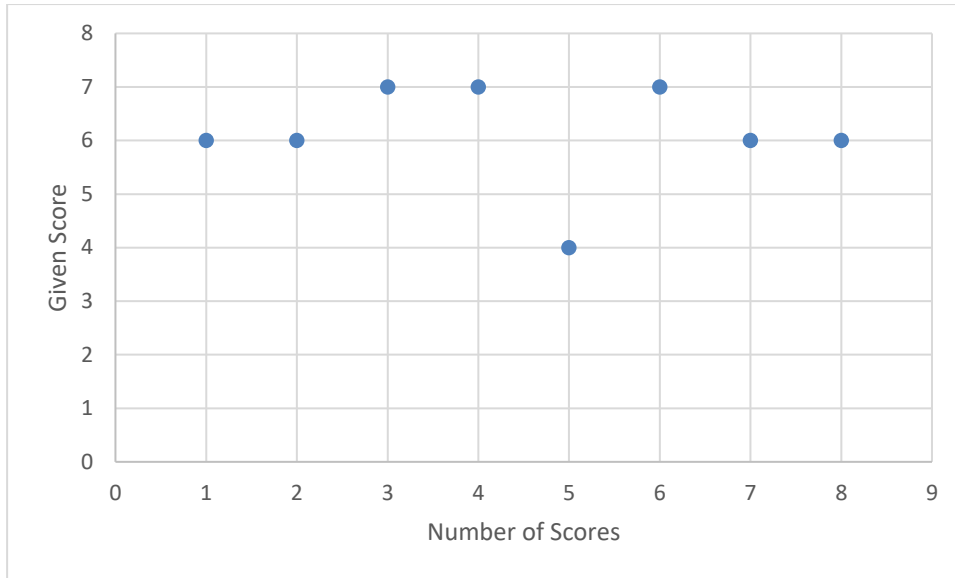


Figure 33 Distribution of Project Manager Stakeholder Interest in Information Technology Projects

On the other hand, the stakeholder group with the lowest Interest over the course of Information Technology projects was the Environmental Activists/Organizations, arguably due to the general irrelevance of most of the activities conducted during these projects to the environment, which in turn does not trigger the interest of such stakeholder group. This is why they had a relatively low Interest average of only 1.5/7 (**Figure 34**), preceded by the Municipality stakeholder group, with 1.75/7, and then the Client stakeholder group, with a 2/7 average. The most and least interested stakeholders in the course of Information Technology Projects are summarized in **Table 22**.

Table 22 Most Interested and Least Interested Stakeholders in Information Technology Projects

Stakeholder Group	Average Interest
Project Manager (Most Interested)	6.125
Project Team, Senior Management	5.5
User(s)	5.25
Client	2
Municipality	1.75
Environmental Activists/Organizations (Least Interested)	1.5

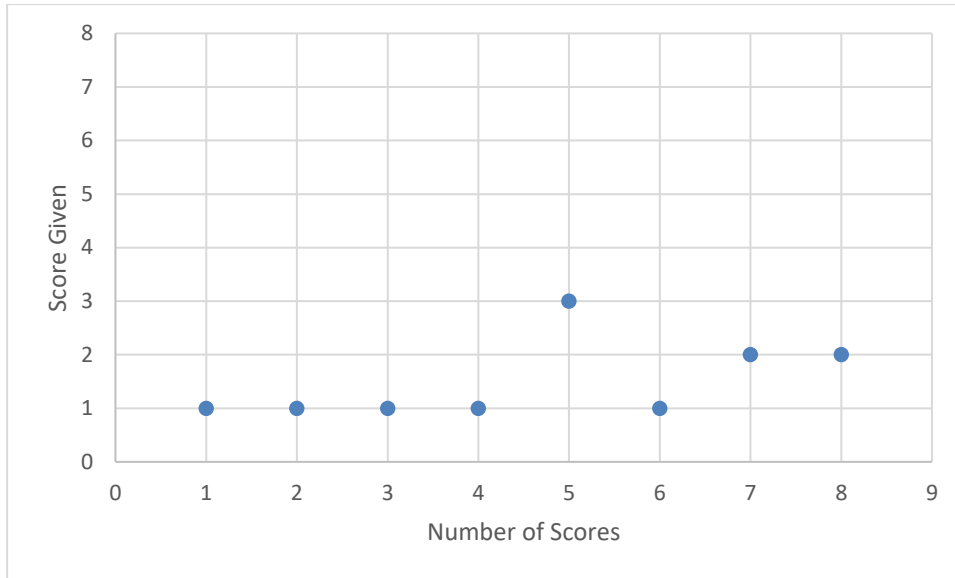


Figure 34 Distribution of Environmental Activists/Organizations Stakeholder Interest in Information Technology Projects

Focusing on Power dynamics in Information Technology projects, we find that the stakeholder group with the highest Power dynamics factor in this business sector was the User(s) stakeholder group, with an average of 6, followed by the Project Teams with 4, and then the Project Manager, and the Owner/Sponsor stakeholder groups, with an average of 3.

On the other hand, comes the Municipality stakeholder group as the least dynamic stakeholder with respect to Power in Information Technology projects, with an average of 1, and preceded by the Media, Senior Management, Public, and Environmental Activists/Organizations, who had an average of 1.5, and the Client stakeholder group at 2. **Table 23** summarizes the stakeholders with the highest and the lowest Power dynamics factors in Information Technology projects.

Table 23 Stakeholders with the Highest and the Lowest Power Dynamics in Information Technology Projects

Stakeholder Group	Power Dynamics Factor
User(s) (Most Dynamic)	6
Project Team	4
Project Manager, Owner/Sponsor	3
Client	2
Media, Senior Management, Public, Environmental Activists/Organizations	1.5
Municipality	1

Considering Interest dynamics in Information Technology projects, it has been found that the stakeholder group that has shown the highest dynamic nature was the User(s) stakeholder group,

with an average Interest dynamics factor of 8, followed by the Media and the Public, at 3.5, and then the Project Manager, Project Team, and Senior Management stakeholder groups, at 2.5. On the other hand, the stakeholder with the most static Interest levels in Information Technology projects was the Client stakeholder group, with an average Interest dynamics factor of 0, and it was preceded by the Environmental Activists/Organizations at 1.5, and the Municipality and Owner/Sponsor stakeholder groups, with an average of 2. **Table 24** summarizes the stakeholders with the highest, as well as the lowest, Interest dynamics from this business sector.

Table 24 Stakeholder Groups with the Highest and the Lowest Interest Dynamics in Information Technology Projects

Stakeholder Group	Interest Dynamics Factor
User(s) (Most Dynamic)	8
Media, Public	3.5
Project Manager, Project Team, Senior Management	2.5
Municipality, Owner/Sponsor	2
Environmental Activists/Organizations	1.5
Client (Most Static)	0

The stakeholder group with the highest overall dynamics in the case of Information Technology projects then was then the User(s) stakeholder group, due to their high dynamism in both Power and Interest, scoring an average of 14, followed by the Project Team stakeholder group, with 6.5, and the Project Manager stakeholder group with 5.5.

On the other hand, it was the Client stakeholder group who was the least dynamic in this type of projects, with an average of 2, preceded by the Municipality, and Environmental Activists/Organizations stakeholder groups, at 3, and Senior Management, with an average of 4. The stakeholders with the highest and the lowest dynamic nature in this type of projects are summarized in **Table 25**.

Table 25 Most Dynamic and Least Dynamic Stakeholders in Information Technology Projects

Stakeholder Group	Total Dynamics Factor
User(s) (Most Dynamic)	14
Project Team	6.5
Project Manager	5.5
Senior Management	4
Municipality, Environmental Activists/Organizations	3
Client (Least Dynamic)	2

4.5. Healthcare Services

The last category of projects from which responses to the survey were received was Healthcare Services, with two responses accounting for 16.7% of the responses received. In this business sector, it was the Owner/Sponsor stakeholder group that earned the highest average Power, with 5.5/7 (**Figure 35**), followed by Senior Management, at 4.5/7, and the Client, with 4.375/7.

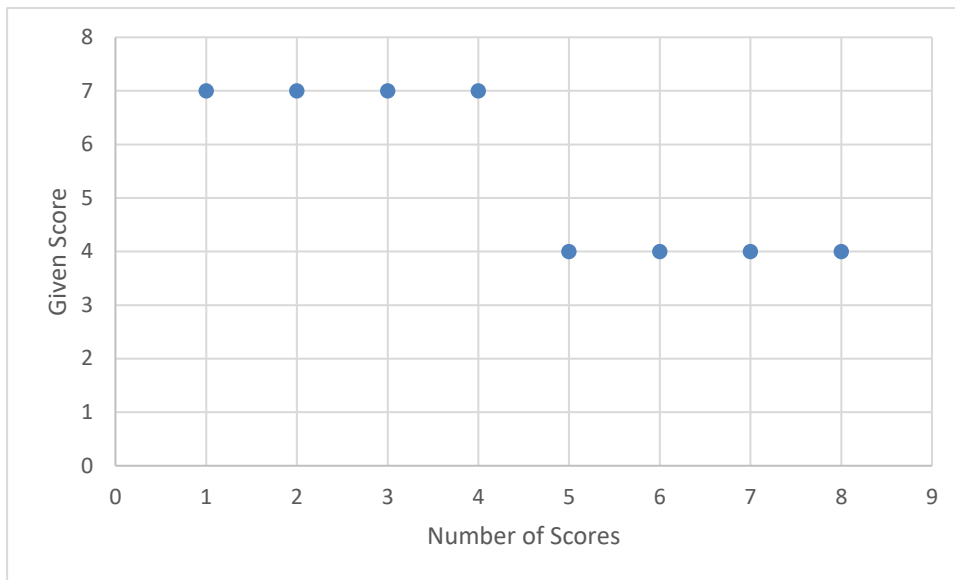


Figure 35 Distribution of Owner/Sponsor Power in Healthcare Services Projects

The least powerful stakeholder group in this type of projects, on the other hand, was the Municipality stakeholder group, with an average Power of 2.375/7 (**Figure 36**), preceded by the Public, and Environmental Activists/Organizations, with an average Power of 2.5/7, and then, with an average of 3.5/7, came the User(s) stakeholder group. **Table 26** covers the most powerful and the least powerful stakeholder groups.

Table 26 Most Powerful and Least Powerful Stakeholders in Healthcare Services Projects

Stakeholder Group	Average Power
Owner/Sponsor (Most Powerful)	5.5
Senior Management	4.5
Client	4.375
User(s)	3.5
Public, Environmental Activists/Organizations	2.5
Municipality (Least Powerful)	2.375

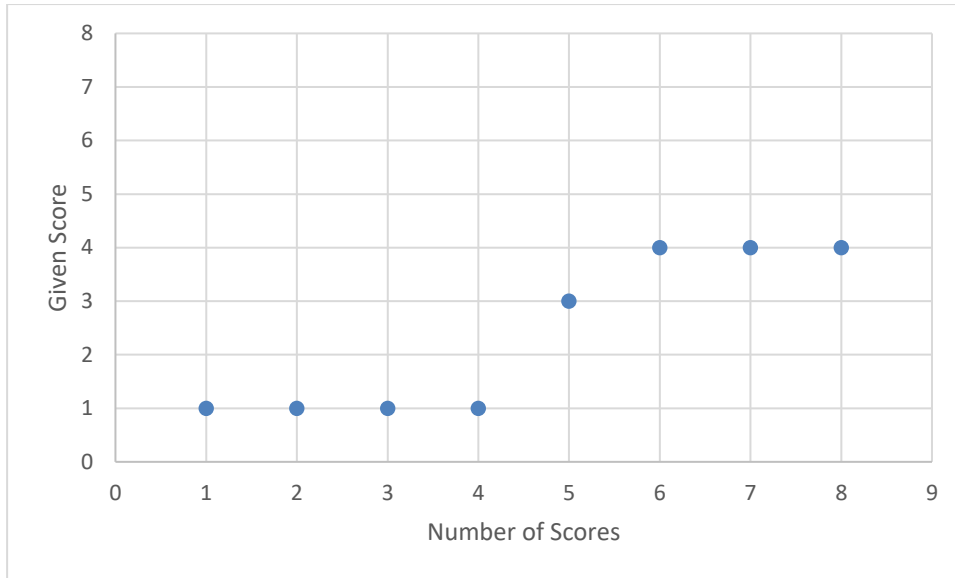


Figure 36 Distribution of Municipality Power in Healthcare Services Projects

Regarding Interest in Healthcare Services projects, it has been found that the Project Manager stakeholder group had shown the highest Interest, with an average of 5.625/7 (**Figure 37**), followed by the Project Team, Media, and Owner/Sponsor stakeholder groups, with an Interest average of 5.125/7, and, with an average of 3.875/7, the User(s) stakeholder group.

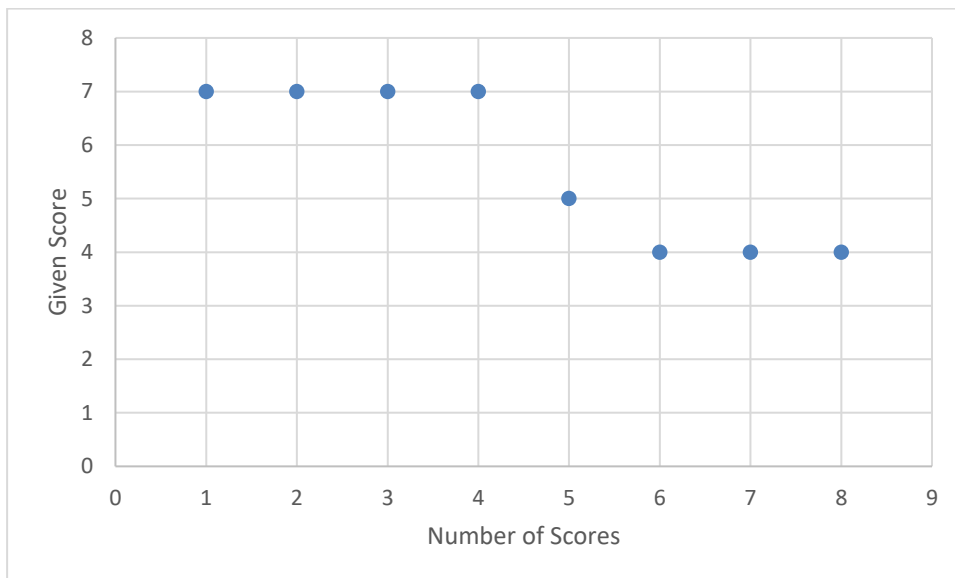


Figure 37 Distribution of Project Manager Interest in Healthcare Services Projects

The stakeholder groups with the lowest Interest level in Healthcare Services projects, on the other hand, were the Municipality, and the Environmental Activists/Organizations stakeholder groups, with the average Interest of 2.5, and have been preceded by the Public, at 2.625, then, with an average Interest of 3.625, the Senior Management stakeholder group. The most interested and the least interested stakeholders in the course of Healthcare Services projects are covered in **Table 27**.

Table 27 Most Interested and Least Interested Stakeholders in Healthcare Services Projects

Stakeholder Group	Average Interest
Project Manager (Most Interested)	5.625
Project Team, Media, Owner/Sponsor	5.125
User(s)	3.875
Senior Management	3.625
Public	2.625
Municipality, Environmental Activists/Organizations (Least Interested)	2.5

Moving on to studying the stakeholder dynamics that had occurred in Healthcare Services projects, it was found that the Project Managers and Clients had shown the highest Power dynamics, with an average of 1.5, followed by the Project Team, Media, and Senior Management stakeholder groups, with an average of 1.

The stakeholder groups with the lowest Power dynamics, on the other hand, were the User(s), Owner/Sponsor, Public, and Environmental Activists/Organizations stakeholder groups, where they had an average Power dynamics factor of 0, making this business sector probably the least dynamic in terms of Power. These groups were preceded then by the Municipality, with an average dynamics factor of 0.5. **Table 28** summarizes the stakeholders with the highest and lowest Power dynamics in Healthcare Services projects.

Table 28 Stakeholder Groups with the Highest and the Lowest Power Dynamics in Healthcare Services Projects

Stakeholder Group	Power Dynamics Factor
Project Manager, Client (Most Dynamic)	1.5
Project Team, Media, Senior Management	1
Municipality	0.5
User(s), Owner/Sponsor, Public, Environmental Activists/Organizations (Least Dynamic)	0

Interest dynamics in Healthcare Services projects provided different results, with Senior Management being the most dynamic, having an average factor of 1, and followed by the Project Manager, Project Team, Media, Client, User(s), Owner/Sponsor, and Public stakeholder groups, all with an average dynamics factor of 0.5, whereas the Municipality, and Environmental Activists/Organizations have shown no Interest dynamics at all, with an average factor of 0. These results are shown in **Table 29**.

Table 29 Stakeholder Groups with the Highest and the Lowest Interest Dynamics in Healthcare Services Projects

Stakeholder Group	Interest Dynamics Factor
Senior Management (Most Dynamic)	1
Project Manager, Project Team, Media, Client, User(s), Owner/Sponsor, Public	0.5
Municipality, Environmental Activists/Organizations (Least Dynamic)	0

Merging the dynamics of Power and Interest, to find the most dynamic stakeholders in Healthcare Services projects, it was found that the Project Manager, Senior Management, and Client stakeholder groups were the most dynamic, with an average dynamics factor of 2, followed by the Project Team stakeholder group, with an average of 1.5, and then the Media, Municipality, User(s), Owner/Sponsor, and Public stakeholder groups, with an average of 0.5. In the same time, it was the Environmental Activists/Organizations stakeholder group that hadn't shown any stakeholder dynamics for this category of projects. **Table 30** shows the most dynamic and the least dynamic stakeholder groups in Healthcare Services projects.

Table 30 Most Dynamic and Least Dynamic Stakeholders in Healthcare Services Projects

Stakeholder Group	Total Dynamic Factor
Project Manager, Senior Management, Client (Most Dynamic)	2
Project Team	1.5
Media, Municipality, User(s), Owner/Sponsor, Public	0.5
Environmental Activists/Organizations (Least Dynamic)	0

In the following chapter, Discussion, the third and fourth research questions will be addressed, where we discuss the possible patterns that might have been observed in stakeholder behavior for a certain business sector, as well as the correlation between stakeholder inclusion and stakeholder environment complexity, and that between Power and Interest.

5. Discussion

In the following Discussion chapter, we shall try to provide answers to the third and fourth research questions. The third being whether there are certain stakeholder groups that have shown any certain patterns of obtaining or losing Power and Interest depending on the business sector to which the project belongs to, and the fourth being the relationship between the complexity of the stakeholder environment and the level of inclusion or engagement of stakeholders into the project decision-making process, as well as whether there is a correlation between Power and Interest.

In the Healthcare Services business sector, we can see that the users, who were mostly nurses and operations theater staff, of a Lean project have shown a negative attitude towards the project at its earlier phases, due to lack of information, however, they have been more collaborative as the project entered its final stages of implementation, where its purpose became clearer and better communicated (Papadopoulos & Merali, 2008). It might also be safe to assume that such change in stakeholder attitude had occurred due to the nature of the project itself, where Lean projects are technically process innovation and improvement projects, and might include changes to stakeholder roles, rules, procedures, structures and communication, and affect their interaction with the external context (Walker, 2006). In which case, some of their free space might be taken as well as their working habits being modified, resulting in forms of resilience and showing disagreement like causing delays (Papadopoulos & Merali, 2008).

This, however, did not really seem to go in line with the findings that were encountered from the survey among respondents from the Healthcare Services projects, where the User(s) stakeholder group had shown minimal average dynamics, while the Project Manager (**Figure 38**), Senior Management, and Client stakeholder groups showed the highest dynamics demonstrated in this type of projects, although the nature of the projects were not clearly defined, which could be the reason behind that divergence from the previous empirical findings. Another difference is that three mentioned stakeholder groups had shown support to the Lean project and throughout the project, where they did not show significant dynamics, while in the findings from the survey conducted to collect the data for this thesis, we can see different changes in Power and Interest, resulting in changes in overall attitudes from all three stakeholder groups.

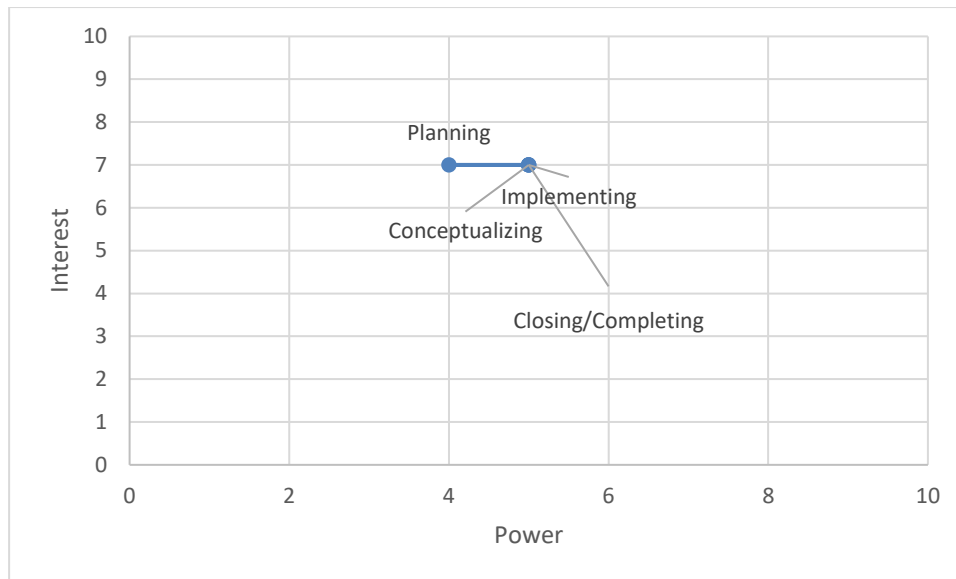


Figure 38 Project Manager Dynamics in a Healthcare Services Project

In the Construction/Infrastructure sample of projects, the stakeholder group with the most significant Power changes was not identified as the Public, as would be expected. Instead the highest changes in Power occurred within the Municipality (**Figure 39**), where the lowest dynamics occurred within the Public stakeholder group. It can be assumed that this was the case because the survey was carried out in Norway, where it is common that people are of trusting and peaceful nature, as well as a high level of respecting laws and regulations. It might also be due to the absence of the need to protest or show opposition when the Municipality, which has shown a certain level of dynamics, can do that on the Public's behalf. In one of the projects, we can see the Interest level dropping from its highest, 7, to its lowest, 1, between the Planning and the Implementing phase, and then rising again to its highest, 7, between Implementing and Closing/Completing (**Figure 40**). This could be due to certain issues that arose during Implementing, which required the Municipality to interfere in order to resolve them during Closing/Completing.

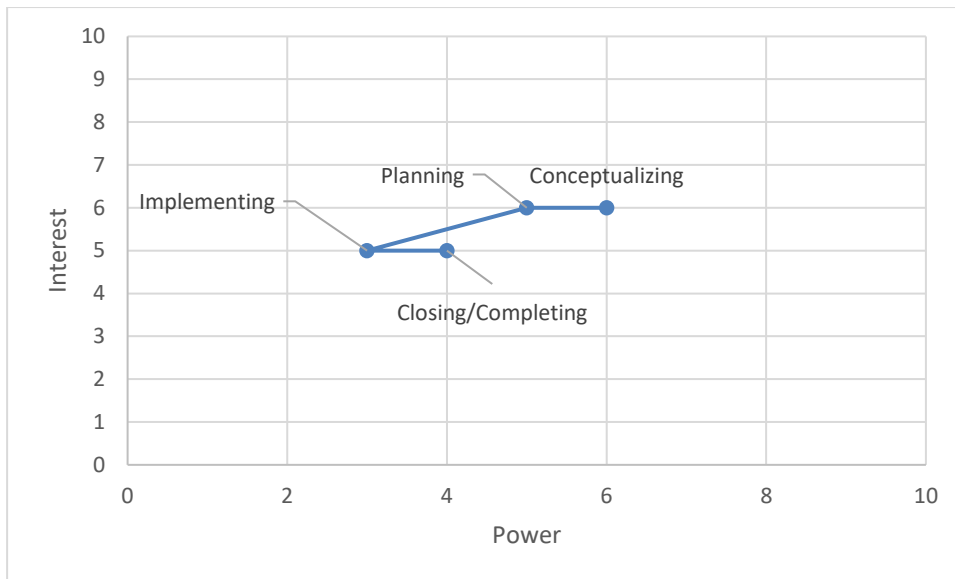


Figure 39 Municipality Dynamics in a Construction/Infrastructure Project

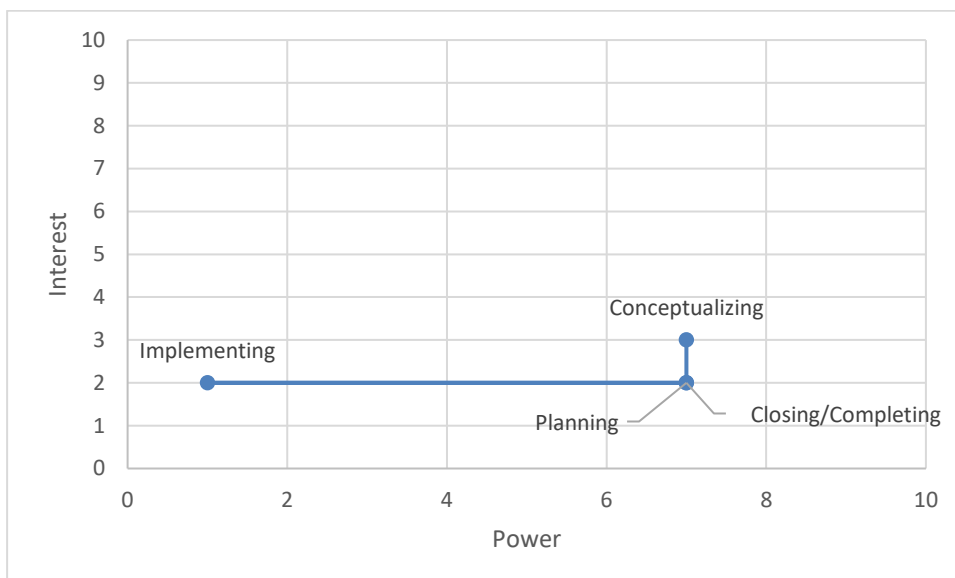


Figure 40 Municipality Dynamics in a Construction/Infrastructure Project Emphasizing Interest

As for the Information Technology business sector, it was found that the User(s) have been the most dynamic stakeholder group among all, with their lowest Power and Interest scores usually occurring during the Planning phase of projects, and relatively high scores in the last two phases, Implementation and Closing/Completing (**Figure 41**). This might be the case due to the IT developers and companies holding their users at a high position and carefully taking their feedback about the products and services they provide into consideration.

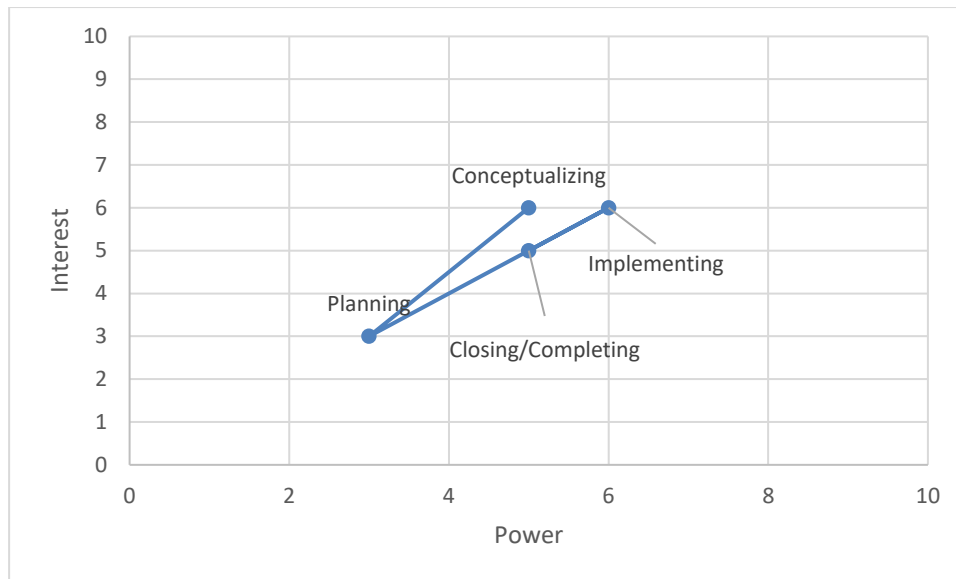


Figure 41 User(s) in an Information Technology Project

The User(s) stakeholder group has shown some consistency with the way its Interest dynamics worked, with a relatively high Interest score during the Conceptualizing phase, dropping to relatively lower levels during Planning, and rising again during Implementing and Closing/Completing. This could possibly be explained by the lower level of stakeholder inclusion during the Planning phase related to the rest of the phases, as indicated by one of the respondents to the survey for one of the Information Technology projects, or simply the nature of the majority of users for this type of project, who may not concern themselves with the project itself as they do with the outcome produced by it.

In Research and Development projects, it was the Project Manager stakeholder group that maintained high levels of Power and Interest throughout the project course, with no dynamics denoted by the respondents. On the other hand, it was the Senior Management that has shown stakeholder dynamics in this type of projects (**Figure 42**), although their Power and Interest scores were not as high as the Project Managers'. This might mean that the motivation and passion of the Project Managers play a role in this type of project. Seeing a new technology or product come to existence and observing all the phases of its development might be the reason behind high motivation, and in turn high Power and Interest for Project Managers. Senior Management, on the other hand, could be concerned with a portfolio of projects, resulting in them not being able to show the same level of Interest towards all of them, and allowing a higher level of autonomy and decision-making power to Project Managers and their teams, which explains why the Project Teams have also shown relatively high levels of Power and Interest, and a very low dynamics factor for Research and Development projects.

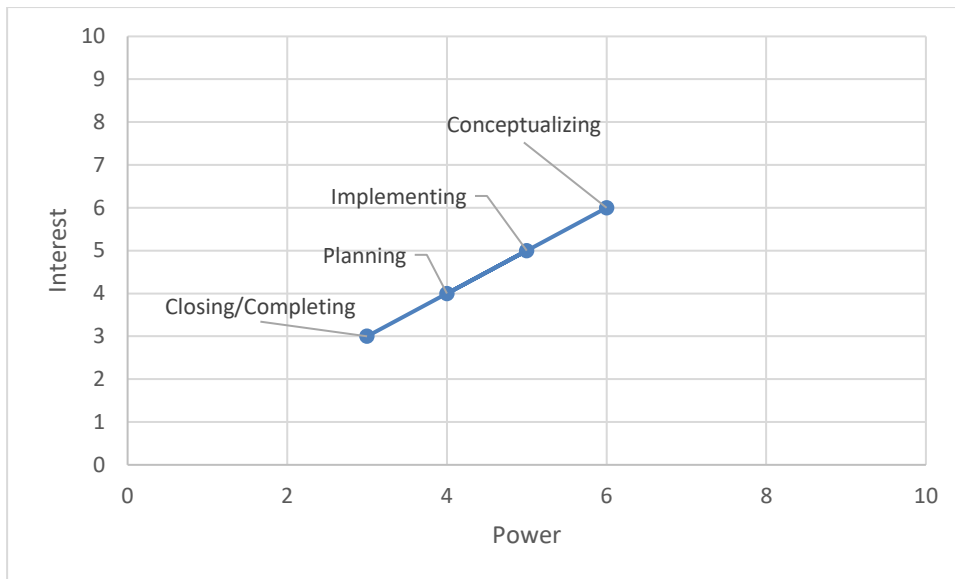


Figure 42 Senior Management Dynamics in a Research and Development Project

In Oil and Gas projects, we can see from the survey findings that the Project Managers do not seem to possess the same Power in the Conceptualizing phase as in the following phases. The numbers show that there is a slight increase in the Project Manager power from the Conceptualizing phase and into the Planning phase, which they have maintained in most cases through the Closing/Completing phase. This could possibly be explained by the high Power that the Client and Owner/Sponsor stakeholder groups have during the Conceptualizing phase, where, so early in the project, they are the ones evaluating alternatives, feasibility, profit, and other aspects of the project, which does not give room for the Project Manager to have power over the decisions being made until the Planning starts.

Although while looking at the Oil and Gas projects, it had been assumed that the Environmental Activists/Organizations would show a very high interest in showing and stating their expectations regarding the projects due to their direct effect on the environment, it was surprising to see that they have scored relatively low numbers throughout all four phases of the three projects for which data was available. Again, this might be due to the Norwegian system, where the government sets the standards for environmentally sound techniques, eliminating any conflicts that could directly take place between a project organization and the surrounding stakeholders.

Eventually, it was the Senior Management that had shown the highest dynamics in Oil and Gas projects (**Figure 43**). This might be due to issues arising unexpectedly in the course of carrying out such projects, which keeps the Senior Management, with their authority and experience, holding the power in their hand at times and giving the opportunity to project managers and teams at the times when their interference is not needed.

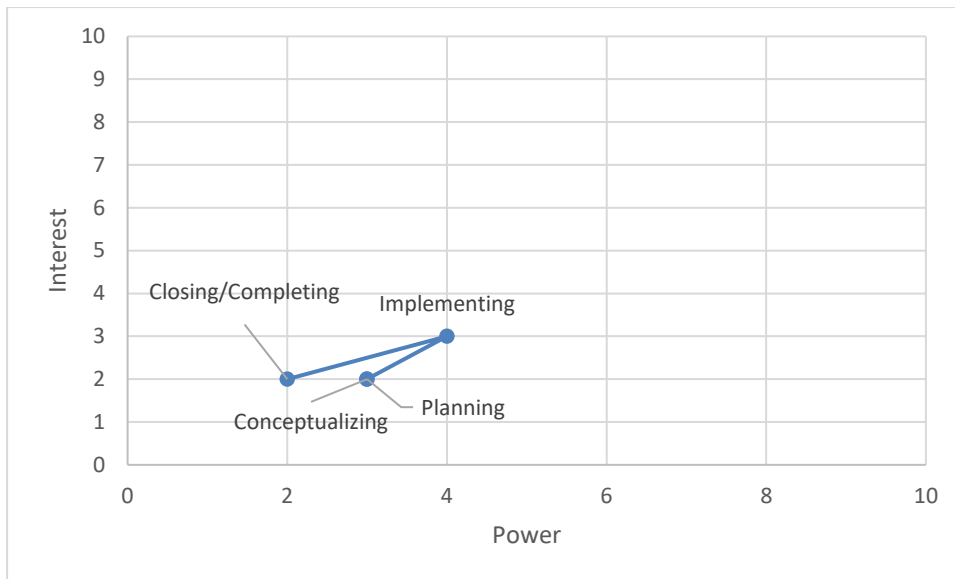


Figure 43 Senior Management Dynamics in an Oil and Gas Project

Regarding the fourth and last research question, the data collected showed that the correlation between inclusion and complexity was as high as 64% (**Figure 44**), which can be judged to be relatively very high. However, such correlation was the overall one, and cannot be said to be the same across all four phases of a project. The correlation during Conceptualizing for example, was 50.4%, it was almost 58% for Planning, 45.4% during Implementing, and 84.2% at Closing/Completing. It is unclear, however, which variable affects the other, where no detailed information was available to determine that.

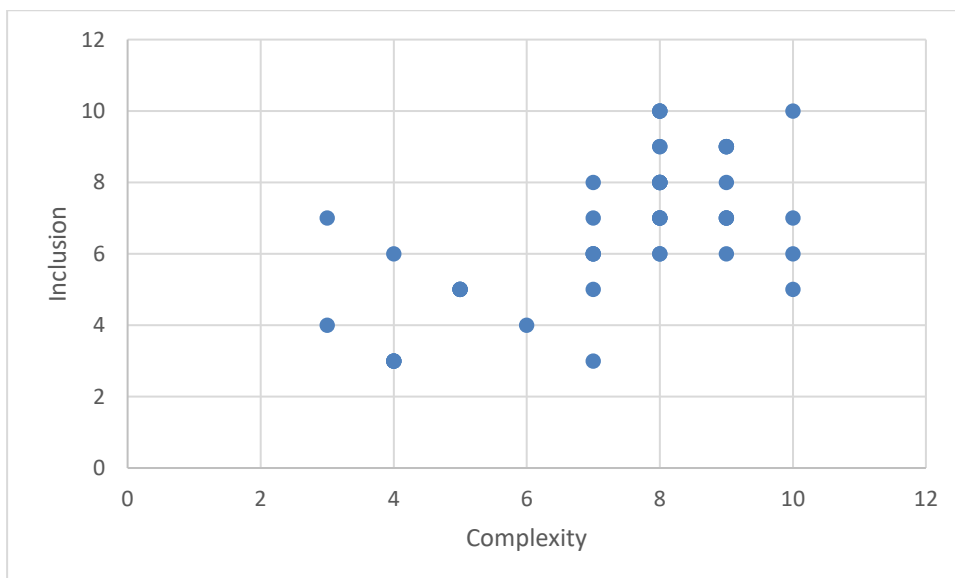


Figure 44 Correlation between Inclusion and Complexity

As for the correlation between the increase or decrease of Power and Interest, an astonishing correlation of nearly 81.7% was calculated (**Figure 45**), showing that Power and Interest could indeed be affected by each other's values. However, due to the lack of information, an

assumption was made that it is only Power that affects interest, but not the other way around. It is highly possible that a stakeholder shows more interest in a project when they are given more power. Power can be assumed to stimulate interest, where their motivation can be determined by the amount of significance they bring to project decisions, while interest, without control over resources, cannot result higher power. The correlation between Power and Interest for each stakeholder across the project phases is depicted in **APPENDIX C**.

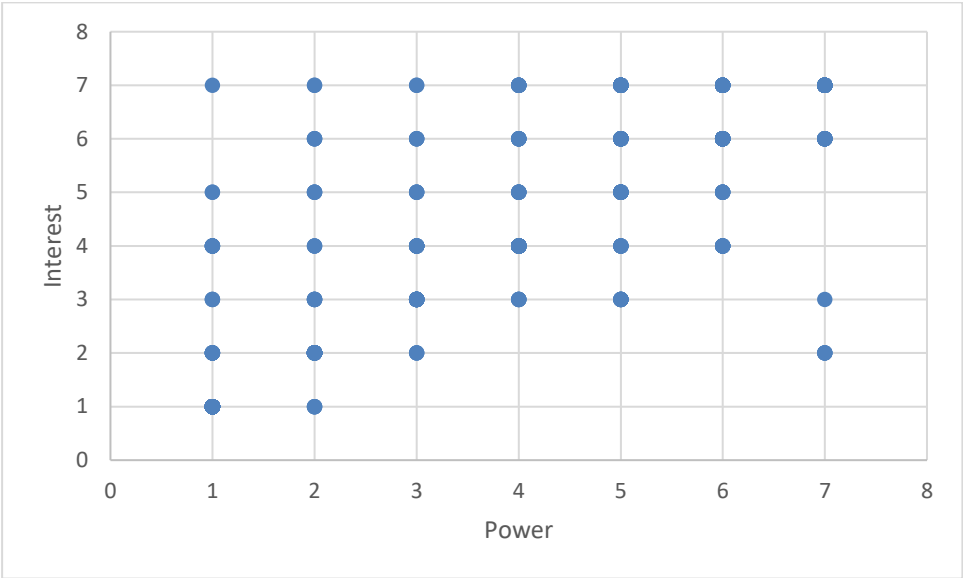


Figure 45 Correlation between Power and Interest

Summing up the most important findings from both the Findings and Analysis, and the Discussion chapters, it could be observed that the most powerful stakeholder in projects carried out in Norway is the Owner/Sponsor of the project, while the least powerful has been identified as the Environmental Activists/Organizations. This probably proves the assumption that the most significant resource in a project, on which a stakeholder builds their claim and power over the decision-making process, is the finance. This assumption could be built on the fact that the Owner/Sponsor is usually the stakeholder supporting a project financially while the Environmental Activists/Organizations are usually just groups of volunteers who have nothing to provide to a project in order to earn Power over its decision-making process.

The stakeholder group has also shown the least Interest, Power dynamics, and overall dynamic nature across the projects, which might be an interesting finding in need of further research, in order to understand more about this stakeholder group, given the fact that Norway is known as an environmentally sound country, with environmentally friendly strategies like promoting electric cars and reducing the carbon footprint, which is why the stakeholder group had been included in the list of proposed stakeholders in the first place, and higher impact and significance had been expected from them.

Across different sectors, different stakeholders have been the most Powerful, interested, or dynamic. Sometimes it happened due to authoritative power, as in the case of Senior Management being the most powerful stakeholder group in Information Technology projects, control over necessary resources, as in the case of Owner/Sponsor being the most Powerful stakeholder group in Construction/Infrastructure projects, technical competencies, as in Project Managers being the most powerful, as well as the most interested in Research and Development projects, and the User(s) having the highest Power dynamics, Interest dynamics, and overall dynamics in Information Technology projects, depending on their experience and behaviors.

The most dynamic stakeholder group was identified as the User(s). Since this, in some of the cases, can be considered as a small or a large population of people, who are affected by other factors than pure technical aspects of a project or out of a project personnel's control, like marketing, communication, and interpersonal relationships, as well as their own previous experiences with similar products or services, all of which constructing the user behavior and attitude of this stakeholder group, which can be at times more emotional than rational.

The least dynamic stakeholder, on the other hand, had been concluded to be the Environmental Activists/Organizations. Since the Oil and Gas, and the Construction/Infrastructure have formed 33% of the responses to the survey, and this would have given this stakeholder group probably more weight and activity, since they are the most relevant projects to the purpose of their existence, due to the possible impacts they can have on the environment, it was surprising to see the Environmental Activists/Organizations show such weak dynamic nature. From another perspective, this might be the case due to the official efforts of the government and local authority bodies in Norway, forcing project organizations to take environmentally sound measures while carrying out projects, and maybe because all the conflicts that might arise between project organizations and this stakeholder group might have already been resolved in the past, and frameworks have been already agreed upon. The possibilities can be endless, and each one can make more sense than the other, but it can be really unwise and ultimately optimistic to expect a similar outcome in many other countries and geographical locations. This is probably unique to the case of Norway and very few other countries and regions in the world. It was also found that there is a high correlation between the levels of Power and Interest, where they were rising and falling together in several cases (**APPENDIX C**). This suggests that a high Power allowed to or earned by a stakeholder group can trigger their Interest, and vice versa. The opposite is highly unlikely, where high Interest does not earn a stakeholder more Power than the more powerful stakeholders allow them, or the resources they possess can determine,

and failing to show Interest will not, in most of the cases, make them lose Power, where their resources will allow them to maintain such Power. One of the exceptions could be a stakeholder “stealing” Power from another, by expressing more Interest and proving their presence through better relationships with other stakeholders or managing to provide resources at lower costs.

A high correlation has also occurred between the complexity of a stakeholder environment surrounding a project and the level of inclusion of stakeholders in the decision-making process. It can be suggested that more complex stakeholder relationships require more inclusion, or that including all stakeholders and attempting to satisfy everyone’s expectations eventually leads to complicating the stakeholder environment, either case is possible.

6. Conclusion

In this chapter the research method, along with main findings are summarized, along with answers to the research questions, as well as suggestions for future research and suggested improvements for the research methodology in order to try and avoid the issues that have arisen in the course of developing this Master thesis.

This Master thesis was written with the aim of addressing the concept of project stakeholder evolution and dynamics, by studying the movements of various stakeholders on the Power/Interest matrix across the four phases of a project: Conceptualizing, Planning, Implementing and Closing/Completing, to find out who the most dynamic, as well as the most static stakeholders are in projects carried out across different business sectors in Norway. In order to do so, a closed-question online survey was sent out to participants in Prosjekt Norge, where they were asked to give some fundamental information, such as the type, budget, and duration, as well as Power and Interest scores to different stakeholders at each phase, of the last completed project they had been part of. The list of stakeholders included: Project Manager, Project Team, Media, Senior Management, Municipality, Client, User(s), Owner/Sponsor, Public, and Environmental Activists/Organizations. Additionally, the respondents were asked to rate the level of complexity of the stakeholder environment and stakeholder inclusion and engagement at each phase of the same project.

Twelve responses to the survey have been received, covering projects from five Norwegian business sectors: Oil and Gas, Healthcare Services, Information Technology, Research and Development, and Construction/Infrastructure, with three responses from Oil and Gas projects, three from Construction/Infrastructure, and two from each of the other three sectors. The data collected from these responses was processed using Microsoft Excel functions in order to quantify stakeholder dynamics and analyze them in a numerical manner. This resulted in identifying the most powerful, interested, and dynamic stakeholders for each sector, as well as the correlation between Power and Interest, and inclusion of stakeholders and the complexity of the stakeholder environment they form around a project.

Four research questions acted as the starting point to writing this Master thesis, to which the answers are summarized in the following:

6.1. Research Question One: Who are the most, and least, powerful, interested and dynamic stakeholders in Norwegian projects from different sectors?

The Owner/Sponsor stakeholder group was identified as being the most powerful stakeholder group in Norwegian projects, suggesting that the financial resources play the most important role in determining a stakeholder's position in a project's stakeholder environment, and a need to include such stakeholders to make sure that their participation in the decision-making process would serve the best interests of the project.

It was the Project Manager stakeholder group, however, that showed the highest Interest in projects in Norway, probably due to their will to strengthen their leadership position by acquiring as much information as they can, and due to the nature of their job as the managers of the projects, which makes them finally responsible for project success. Additionally, they have been the most powerful and the most interested in Oil and Gas projects, probably due to the big project size of this type of projects, the huge investment of financial resources, requiring the project managers to always be alert and show continuous interest, as well as having so little room for error, leading them to exercise their Power strictly.

The User(s) were the most dynamic stakeholder group, which might be understandable giving the changes in this stakeholder group's continuous changes in taste and behavior, shaped by marketing and communication strategies, as well as their own backgrounds and experiences. These assumptions were strengthened by the fact that the same stakeholder group was also the most dynamic in Information Technology projects, which is a business sector with virtually high competition and a variety of products and services, all attempting at winning this stakeholder group's favor.

The Public, and Environmental Activists/Organizations did not earn the high positions that had been assumed based on the first impression about Norway, probably because of the stability and strictness of the Norwegian system when it comes to citizen rights and expectations being expressed through political representatives, and the laws and regulations that shape and limit the impact on the environment, eliminating the conflicts that could arise between these two stakeholder groups and project organizations causing them to need to demonstrate Power or show Interest.

In terms of numbers, it could be safe to say that the Healthcare Services projects can be relatively stable, with low Power demonstrated, Interest shown, and dynamic nature. This is probably due to the nature of the Healthcare Services sector and the personnel involved, where

the issues that lead into conflict, which can be one of the drivers behind stakeholder dynamics, are minimal.

6.2. Research Question Two: How do stakeholder dynamics look after the front-end phase of a project?

This question needs to have a really contextual approach to its answer. The complexity that is embedded in the stakeholder environment, since its management process and outcome eventually go down to human behavior and the context within which it operates it, makes it nearly impossible to construct a reliable model that can be applied to all projects, even within the same sector, backed by the inherent fact that each project is unique, no matter how similar it is to other projects, especially when it comes to the stakeholder environment surrounding it.

6.3. Research Question Three: Are there patterns demonstrated by stakeholders depending on the business sector to which a project belongs to?

From the results obtained, very rare patterns could be found, which might be due to the small number of responses received for each business sector, and the absence of data explaining the changes in Power or Interest or both, making it hard to use them as a base to build solid findings that can be relied upon. However, reflections have been given when possible in order to explain the levels of Power and Interest, as well as the stakeholder dynamics, as an answer to this question.

For example, it was found that a project manager's power during the Planning phase of an Oil and Gas project is higher than their Power during the Conceptualizing phase, the media's Power and Interest deteriorate as an Oil and Gas project proceeds, and the same for municipalities, and Environmental Activists/Organizations. On the other hand, a project manager's power increases with time when it comes to Information Technology projects, where User(s) Power and Interest are lowest during the Planning phase of this type of project.

6.4. Research Question Four: Is there a correlation between the complexity of the stakeholder environment surrounding a project at different phases and the level of inclusion and engagement of stakeholders? And is there a correlation between the levels of Power and Interest?

The correlation between the complexity and the inclusion levels was as high as almost 58%, suggesting that these two variables can strongly affect each other. However, since no explanation or elaboration on the levels recorded by the survey recipients, it is therefore hard to know exactly which one is affecting the other. It can be assumed, however, that the need for

stakeholder inclusion and engagement increases with the complexity of the stakeholder environment, or that higher inclusion and attempting to engage stakeholders can result in a more complex stakeholder environment, due to their various, and sometimes conflicting, expectations being taken into account.

While the correlation between complexity and inclusion was considered high, it was the correlation between Power and Interest that had exceeded all expectations. With 81.6% correlation, the door was open for all kinds of interpretations and assumptions. This high number could be explained in many ways. For example, it could be that a higher Power allowed to or earned by a stakeholder triggers their Interest, while the other way around is not entirely, where a high Interest level does not necessarily guarantee a similar Power level, with a few exceptions. One of these exceptions might be the case of a stakeholder 'stealing' Power from another stakeholder by promoting themselves, for example at a time of crisis or when a complicated issue arises. Another assumed exception is if a stakeholder can take control of a critical resource, originally provided by another stakeholder, and offering it at a lower cost and with the same quality.

In the next section, few suggestions and recommendations for future research are given, in an attempt to overcome the challenges that were faced, and make use of the findings that were concluded, during the writing process of this Master thesis.

6.5. Further Research

The concept of stakeholder dynamics and evolution is probably one of very high potential. This Master thesis was just a tip of the iceberg, introducing the concept with limited resources and within a tight timeframe. However, different approaches and improvements can be suggested for further research into the concept, both methodological and contextual.

The methodology used in collecting the data proved to be of limited effectiveness, where the online survey did not return the number of responses that had been hoped for, and the data was highly limited, which made it hard to build solid results and arguments. This might be changed if a more personal and proactive approach is taken to the data collection process, asking respondents for meetings or phone-calls can be more effective to understand the logic behind their responses and to back up the data with genuine arguments.

One of the concepts that could be studied in relation to stakeholder dynamics in the future could be the transfer of Power from one stakeholder to another, and how that affects the dynamics of both stakeholders and their relationship with the project.

Extensive studies can also be carried out to try and model stakeholder dynamics within business sectors, as well as comparative studies between countries or regions, to see if stakeholders show the same dynamics or patterns dependent on their geographical regions.

Additionally, due to the interesting findings regarding the very high correlation factors between Power and Interest on one side, and Inclusion and Complexity on the other side, it is suggested that a closer look at the reasoning behind, and factors affecting these phenomena might be needed.

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APPENDIX A Invitation to Online Survey

Invitation to survey about stakeholder evolution and dynamics for Master thesis

(Norwegian below)

Dear Sir/Madam,

Hope this email finds you in the best health and spirit.

I am writing you this email as an invitation to complete a survey about stakeholder evolution and dynamics, whose information will be analyzed and put to use as input data to write the Master thesis “Project Stakeholder Evolution” by the student Omar ElWakeel at the Department of Mechanical and Industrial Engineering of the Norwegian University of Science and Technology (NTNU), under supervision and guidance of Bjørn Andersen, Professor at the Department of Mechanical and Industrial Engineering of the Norwegian University of Science and Technology (NTNU).

The list of stakeholders included in the survey was developed based on the work of Kate Davis (2014), while the phases of the project life cycle were identified using the work of Do Ba Khang and Tun Lin Moe (2008).

To fill out the survey, please click the following link or copy and paste it into your browser: <https://goo.gl/forms/n6ohLNaEN3PJmVXy1> and kindly do so within the next 2-3 weeks.

Should you decide to provide your valuable input, kindly keep in mind the following guiding points:

1. While answering the questions included in the survey, both general and specific, please place your judgement based on the last completed project that you or your organization were part of.
2. Should you find a stakeholder in the list of stakeholders that was represented by you or your organization in that specific project, please leave the rating of that specific stakeholder blank.
3. Please keep in mind the following definitions of the terms “Power” and “Interest”, based on the work of Stefan Olander and Anne Landin (2005) while answering the questions:
 - Power: The ability of a certain stakeholder to impress their own expectations on a project.
 - Interest: The will of a certain stakeholder to impress their own expectations on a project.

I highly appreciate your valuable input by completing the survey and hope I will be able to put it to the best use possible.

Thanks in Advance,

Omar ElWakeel

Hei,

Håper du/dere har en fin dag.

Jeg vil med dette invitere deg til å delta i en undersøkelse om interessentenes utvikling og dynamikk i prosjekter. Informasjonen vil bli analysert og brukt som data til å skrive masteroppgaven min, "Project Stakeholder Evolution", ved Institutt for maskinteknikk og produksjon ved Norges teknisk-naturvitenskapelige universitet, under veiledning av professor Bjørn Andersen.

Listen med interessentene som er inkludert i undersøkelsen ble utviklet basert på arbeidet til Kate Davis (2014), og fasene av prosjektutviklingen ble konstruert på bakgrunn av arbeidet til Do Ba Khang og Tun Lin Moe (2008).

Om du vil være snill å hjelpe oss med data, bruk følgende lenke for å fylle ut undersøkelsen. Om den ikke fungerer, kan den kopieres og limes inn i nettleseren:

<https://goo.gl/forms/n6ohLNaEN3PJmVXy1>

Vi håper du vil avgi dine svar innen 2-3 uker.

Skulle du velge å dele denne verdifulle informasjonen, vær vennlig å huske på følgende:

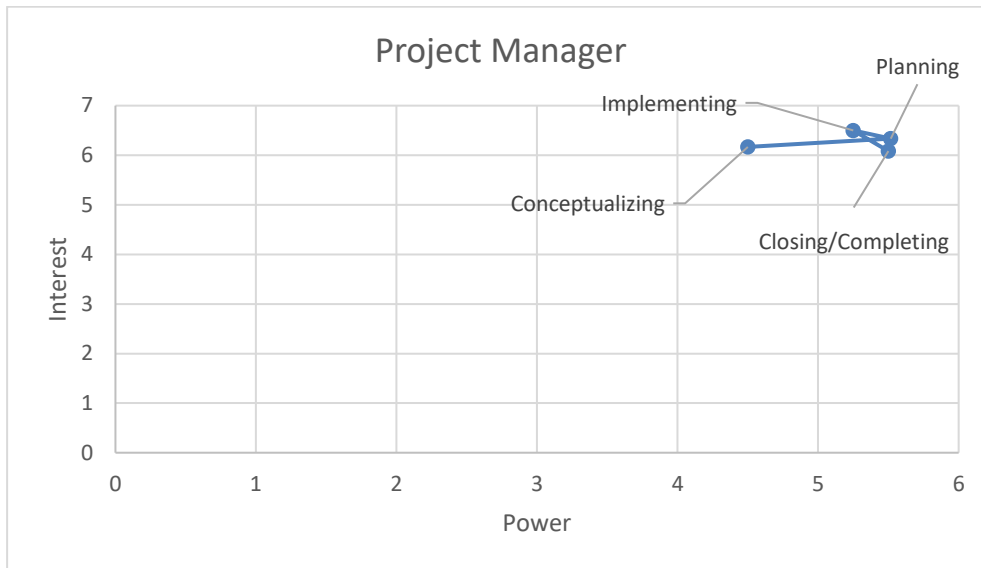
1. Når du svarer på spørsmålene i undersøkelsen, både de generelle og de spesifikke, vær vennlig å basere svarene på det siste prosjektet du eller organisasjonen din var en del av.
2. Skulle du finne en interessent i listen med som var representert av deg eller organisasjonen din for det spesifikke prosjektet, vær vennlig å la spørsmålet stå åpent.
3. Vi bruker definisjonene av begrepene "Power" og "Interest" basert på arbeidet til Stefan Olander og Anne Landin (2005).
 - Power: Evnen til en bestemt interessent til å påvirke prosjektet basert på sine egne ønsker og forventninger til det.
 - Interest: I hvilken grad en bestemt interessent har tilstrekkelig interesse i prosjektet til å aktivt forsøke å påvirke det.

Jeg setter stor pris på din hjelp ved å fullføre undersøkelsen, og jeg håper jeg kan få brukt din verdifulle input på best mulig måte.

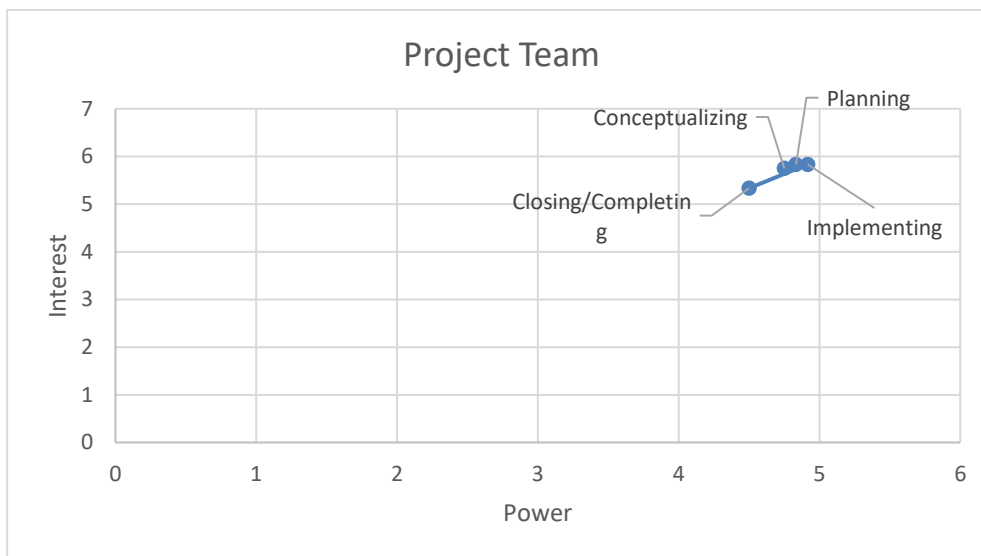
Takk på forhånd.

Omar ElWakeel

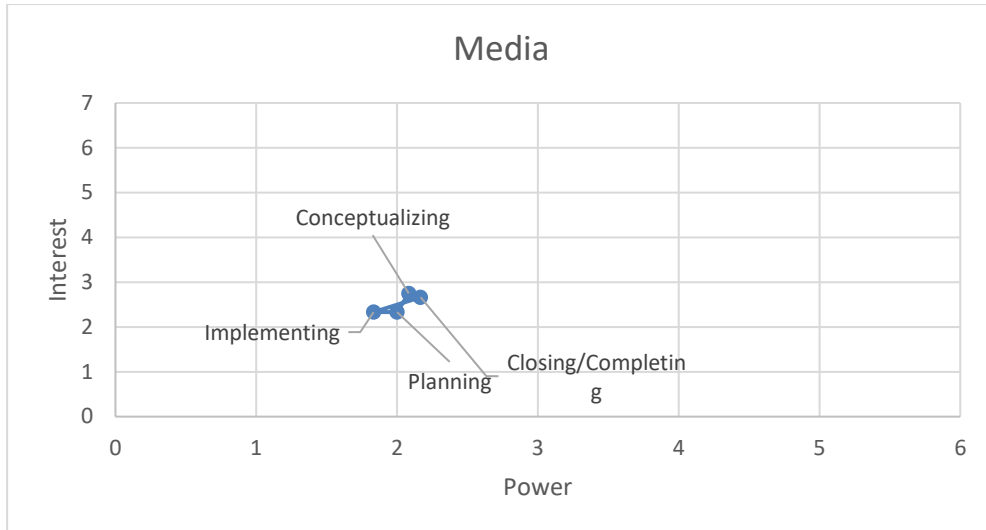
APPENDIX B Stakeholder Dynamics



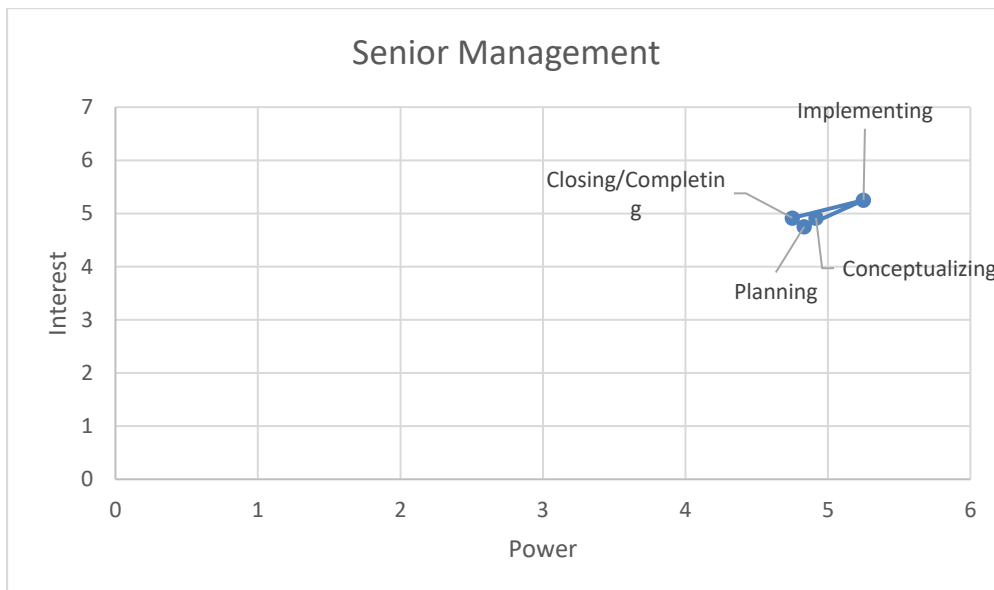
	Power	Interest
Conceptualizing	4.5	6.16666667
Planning	5.16666667	6.33333333
Implementing	5.25	6.5
Closing/Completing	5.5	6.08333333



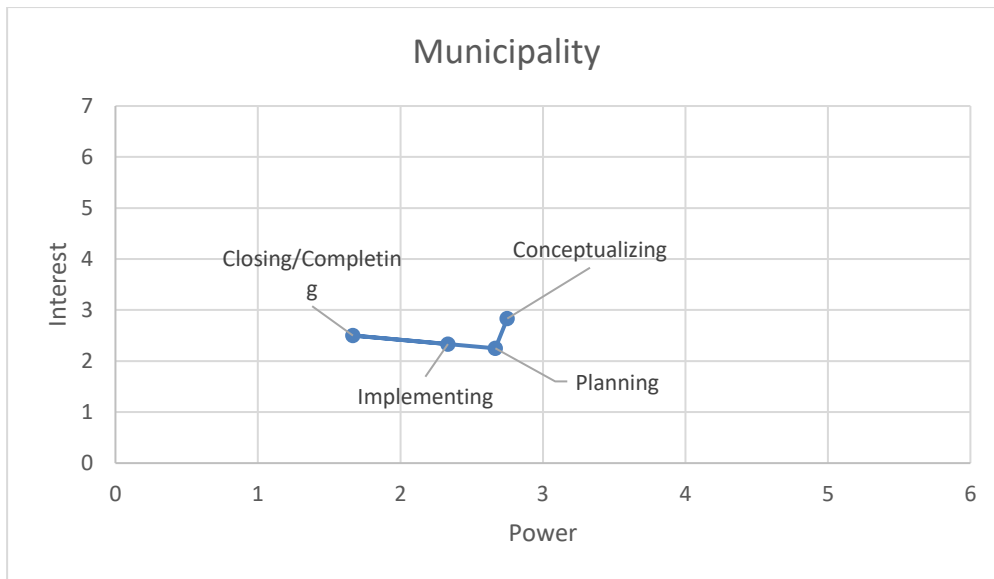
	Power	Interest
Conceptualizing	4.75	5.75
Planning	4.83333333	5.83333333
Implementing	4.91666667	5.83333333
Closing/Completing	4.5	5.33333333



	Power	Interest
Conceptualizing	2.083333333	2.75
Planning	2	2.333333333
Implementing	1.833333333	2.333333333
Closing/Completing	2.166666667	2.666666667



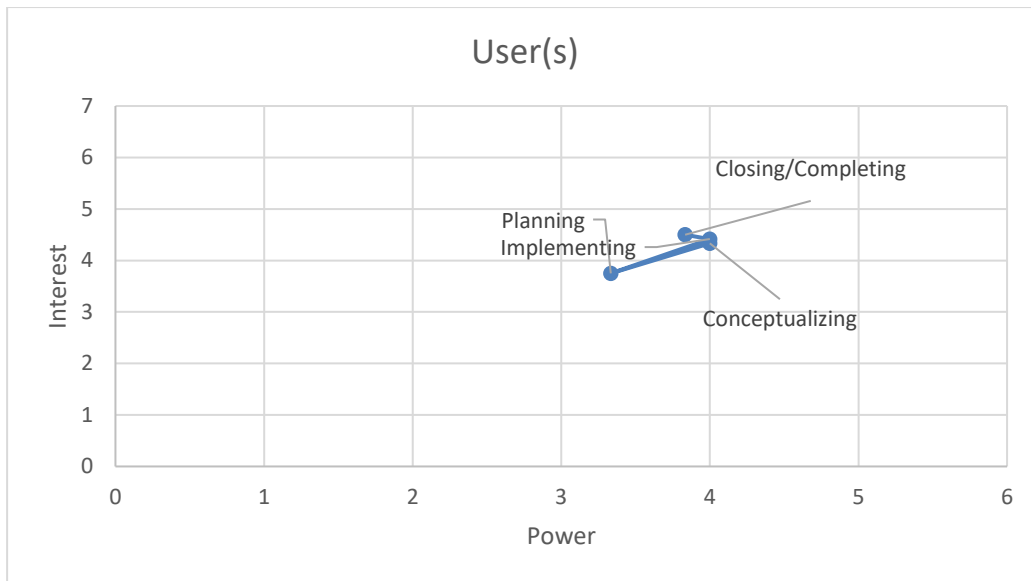
	Power	Interest
Conceptualizing	4.916666667	4.916666667
Planning	4.833333333	4.75
Implementing	5.25	5.25
Closing/Completing	4.75	4.916666667



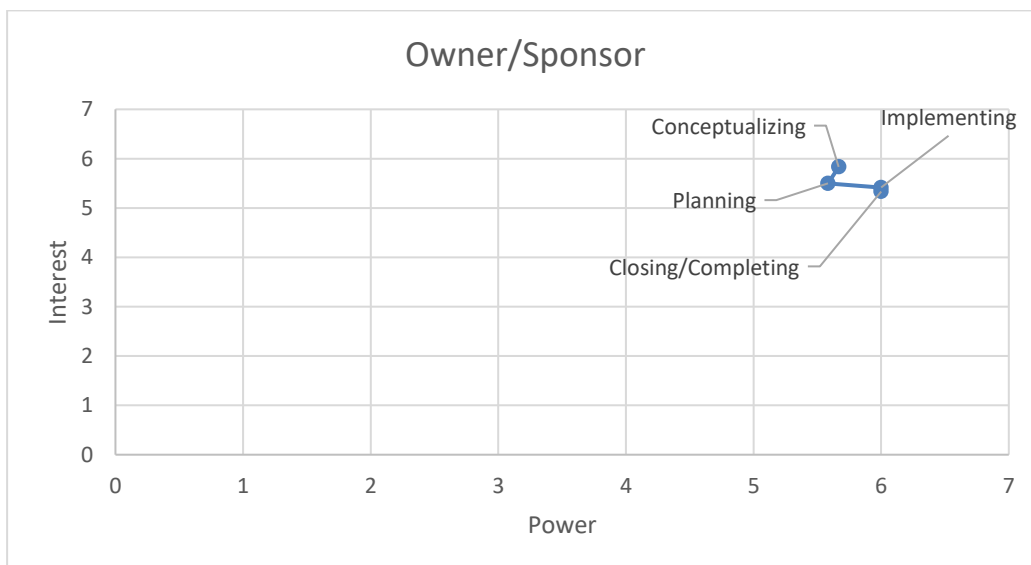
	Power	Interest
Conceptualizing	2.75	2.833333333
Planning	2.666666667	2.25
Implementing	1.666666667	2.5
Closing/Completing	2.333333333	2.333333333



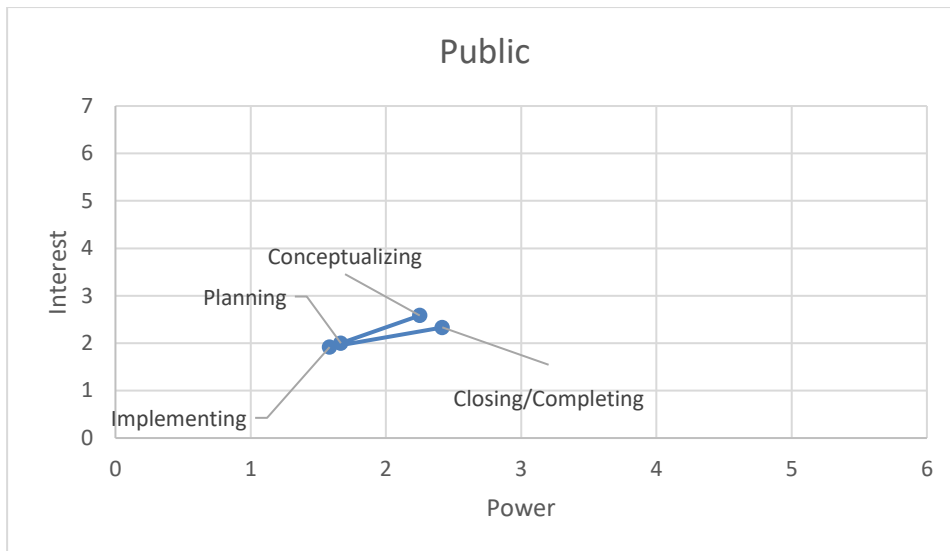
	Power	Interest
Conceptualizing	5.333333333	4.916666667
Planning	4.583333333	4.416666667
Implementing	4.416666667	4.416666667
Closing/Completing	4.5	4.5



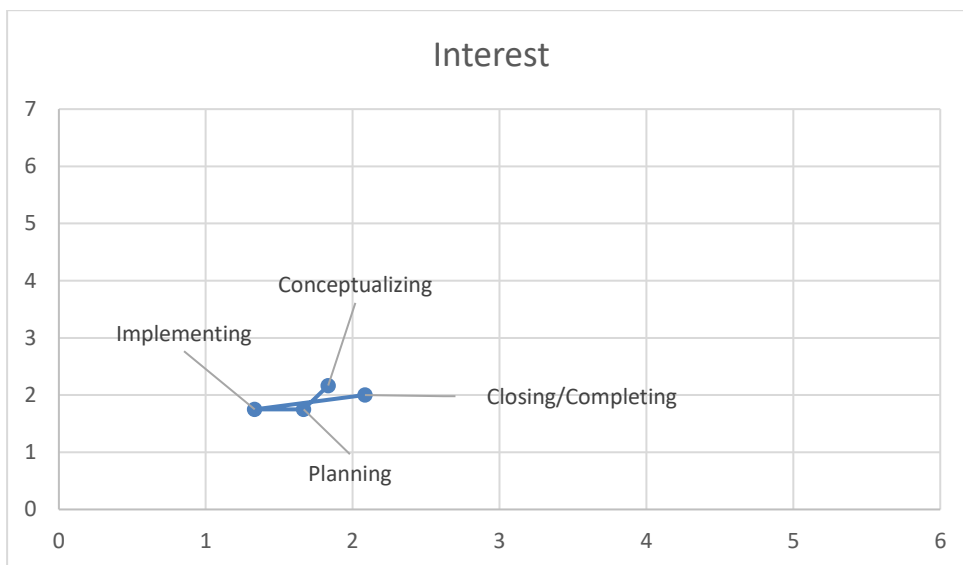
	Power	Interest
Conceptualizing	4	4.333333333
Planning	3.333333333	3.75
Implementing	4	4.416666667
Closing/Completing	3.833333333	4.5



	Power	Interest
Conceptualizing	5.666666667	5.833333333
Planning	5.583333333	5.5
Implementing	6	5.416666667
Closing/Completing	6	5.333333333



	Power	Interest
Conceptualizing	2.25	2.583333333
Planning	1.666666667	2
Implementing	1.583333333	1.916666667
Closing/Completing	2.416666667	2.333333333



	Power	Interest
Conceptualizing	1.833333333	2.166666667
Planning	1.666666667	1.75
Implementing	1.333333333	1.75
Closing/Completing	2.083333333	2

APPENDIX C Correlation between Power and Interest

