Understanding the Core Roles and Responsibilities of Effective Project Managers for Managing Multidisciplinary Teams: A Qualitative Study

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ABSTRACT,

The use of project management has established itself as an integral strategy for businesses to develop and deliver successful projects. As such, project managers over the years have become increasingly more responsible to deliver high quality projects. A manager's performance towards the roles and responsibilities bestowed on him and the success of project management practices is heavily influenced by their competencies. Therefore, the objective of this research is to investigate the core roles and responsibilities undertaken by the project manager and the necessary competencies that a manager must display to perform their core managerial responsibilities. Moreover, there is a gap in the current literature regarding the application of the managers competencies in multidisciplinary project teams. Therefore, this research follows the objective in the context of multidisciplinary project teams and answers the research question that investigates the responsibilities and relevant competencies of a project manager when managing multidisciplinary project teams. The question is answered through the implementation of a systematic literature review accompanied by expert interviews given by project managers to link theoretical as well as practical insights. Through the study conducted, this paper highlights the findings that show the principal competencies that are required by the project manager in multidisciplinary teams, and the paper also contributes to the understanding of what kind of project managers should organizations aim to train and hire, as well as what kinds of skillsets and competencies should the future project manager develop to be useful to organizations.

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Manager competencies, project management, multidisciplinary project teams, communication, leadership, manager responsibilities, project success, effective project manager

1. INTRODUCTION

In recent years, the use of project management as a managerial strategy for undertaking a variety of projects have become popular among organizations. Organizations tend to default to this strategy in order to deal with complex business challenges, perform unique and complicated tasks and deliver high quality products and services (Gareis, 1991). Consequently, as more organizations opt for project management as a management approach, the demand for project managers continues to grow as does the need for the adequate assessment of project managers and their contributions to their projects (Crawford, 2005). Many organizations today undertake projects that employ professionals from a variety of disciplines to reach specific outcomes within a project. As such, many of these said project teams are multi-disciplinary and require a project manager with sufficient competencies to lead and direct the team. According to experts interviewed for this study, despite being labelled as a multidisciplinary project team, they function like any other project team and follows the same principles, therefore understanding how a successful project manager impacts the team is more crucial to understand the managers role in project effectiveness. To understand the nexuses between a project manager and successful projects, it is essential to first understand effective project management. Effective project management, as defined by the Project Management Institute (PMI, 2008) is the "application of knowledge, skills, tools and techniques to project activities to meet project requirements" and attributes high quality projects as those that "deliver the required product, service, or result, within scope, on time and within budget". While the success of a project depends on a variety of different stakeholders involved such as suppliers, customers, line managers etc., the project manager plays a crucial role (e.g., Fabi & Pettersen, 1992). In order for any project management approach to be effective, a suitable project manager who demonstrates high quality managerial attributes as well as potent leadership abilities must be at the helm of the project (George, 2003; Hyväri, 2006). As such, it is evident that project success is heavily dependent on the performance of the project manager involved (Smith,1999; Crawford, 2005). Due to the project managers ability to considerably affect project success as outlined by researchers (e.g., Smith, 1999; Fabi & Pettersen, 1992; Crawford, 2005), it is essential to clearly understand and define the roles and responsibilities of the project manager. While there is an extensive list of management literature that outline the different roles of a project manager, very few papers discuss this concept with a coherent framework that institutionalizes the core roles, responsibilities, and competencies of an effective project manager. In the book "Project Management for the 21st Century" which is frequently cited by researchers of management theory, the authors (Lientz & Rea, 2001) discuss the three clearly defined roles and responsibilities of the project manager. According to the authors, the three roles undertaken by the project manager is that of a **Resource Manager**, **Planning and Control manager**, and **Coordinator**. The resource manager is responsible for managing and directing project resources to achieve project goals (Lientz and Rea, 2001). A good example is the management of human resources as well as assigning and directing the employee life cycle in the project. The planning and control manager is responsible for leading the project team by developing the project plan and ensuring that the project objectives are completed on time, within budget, and with acceptable quality (Lientz and Rea, 2001). This role also directly coincides with the delivery of what is considered a "high quality" project as defined by the Project Management Institute (PMI, 2008). And finally, the third role outlined by (Lientz & Rea, 2001) is that of a Coordinator, who is responsible for the communication both vertically with the upper management as well as horizontally with the line managers and other project team members. A good example is the interfacing with higher management and project team members regarding project reviews, approvals as well as discussing project issues and performance. It is evident that in order for effective managers to perform their roles effectively, they must undertake regular activities to train and measure their project management competencies. For example, strong interpersonal skills will be beneficial for the resource manager managing employee life cycles, whereas communication skills will be crucial for the coordinator role and finally strong leadership skills are necessary during planning and control activities. These are only a few examples of the competencies of the project manager when they are performing their responsibilities.

Kerzner stated that the project manager is also responsible for ensuring that the project team and organizational goals are accomplished. To affect this, the project manager must have strong communicative and interpersonal skills as well as leadership qualities, especially during the controlling function of the project (Kerzner, 2022). Many researchers further stress on the need for an effective project manager to have strong communicative and leadership skills (e.g., Thamhain & Wilemon, 1977; Posner, 1987; Fabi & Pettersen, 1992). For example, it is presented that effective project managers are the ones who create an environment of commitment, honesty, trust and open communication between the team members in order to motivate them to work to their best efforts and improve their performance (Barkley, 2006). On the other hand, a project manager's leadership ability for directing team members is also heavily stressed by researchers to be a factor in effective management (e.g., Thamhain & Wilemon, 1977; George, 2003; Hyväri, 2006). In a nutshell, leadership is identified by researchers (e.g., Gareis, 1991; Posner 1987) as the ability of the project manager to create missions, visions, and strategies for the purpose of reaching project goals and translate them into successful projects.

The question then arises, to what extent is the interpersonal skills and competencies of a manager such as communication and leadership important when compared to other technical competencies? And what kind of competencies should researchers in the managerial space prioritize when defining an effective project manager? And finally, how do these competencies empower the project manager to effectively perform their core roles and responsibilities in multidisciplinary project teams? In a case described by Kerzner when discussing the project managers role (Kerzner, 2022, p. 15), an executive from a computer manufacturer stated that his company was hunting for a project manager. The executive was asked if the expected candidates would require technical computer competencies, he retorted, "You give me an individual who has good communicative skills and interpersonal skills, and I'll give that individual a job. I can teach people the technology and give them technical experts to assist them in decision- making. But I cannot teach somebody how to work with people." To further add to this research, a strength-based approach that focuses on the project managers strengths and the strengths of the project team is discussed, as this research is investigating the roles as well as the competencies of the project manager. A strength-based approach is a theoretical framework that details the effectiveness of working with a person's individual strengths and focusing on them to stimulate growth in an individual strengths or competencies as well as building on that individual's success (Brun & Rapp, 2001). Since there is an emphasis on the competencies of the project manager for project management

success, we will look at the strength-based approach as a strategy to further understand how it can contribute to project manager competencies and whether it is a fitting strategy for project managers to employ.

Much research exists on the competencies and attributes necessary for an effective project manager to the point that managerial competencies have almost become an extensive "shopping list". However, there remains a gap in literature of the understanding of the core responsibilities of a project manager and how their competencies contribute to the success of the project, especially for multidisciplinary project teams. In agreement with many expert researchers in the managerial space (eg. Lientz and Rea, 2001; Kerzner, 2022; Smith,1999; Crawford, 2005), it can indeed be inferred that interpersonal competencies are significant for project managers in performing their roles effectively and ultimately contribute to the success of a project. And as the three main roles of the manager are already generally defined by researchers, the objective of this research therefore is to understand the core responsibilities of the manager with respect to their defined roles and the competencies they require to succeed as effective project managers. Understanding how the manager functions in project teams will allow us to understand his roles in a multidisciplinary team setting, as both function as project teams. As such, the following research question is proposed: *What are the core responsibilities and relevant competencies of the project manager that allows him to effectively manage multidisciplinary project teams?* In order to provide an overview of the key roles and responsibilities that an effective project manager undertakes in relation to their competencies, a systematic literature review will be conducted. In addition, to gain new insights and to add practical relevance to this research, expert interviews has been conducted with two project managers at a large tech company. The expert interviews will provide unique hands-on insights that will allow this research to bridge the gap between theoretical and practical approaches to effective project management.

For the sake of brevity in this research, it is important to clearly define the terms "roles", "responsibilities" and "competencies". An overwhelming amount of literature use these terms interchangeably in their research, and while most of them have common themes between them, the distinction between them is rarely made. In this research, the three roles as defined by (Lientz and Rea, 2001) will be used as umbrella terms that encompasses a variety of responsibilities grouped within their relevant roles. The roles described by the authors are included in this research to provide an understanding of what kind of tasks and responsibilities the average manager performs. And competencies will be discussed as the innate abilities of the project managers that allow them to effectively carry out their responsibilities in project scenarios and ultimately fulfill their roles contributing to project success. A good example is the expected managers responsibility to solve conflicts between team members during a project. This responsibility can be categorized under control management as conflict can cause delays in project objectives being met on time, and to ensure conflicts are solved before becoming detrimental, the interpersonal and leadership skills of the manager will be tested. The study considers the subjective nature of this qualitative research topic, as there exists many managerial roles that differ from organization to organization with each organization prioritizing different managerial competencies depending on the project. Therefore, to limit and categorize the most relevant and common roles and responsibilities of project managers in today's organizations as well as avoid merely investigating a manager's role as glorified job descriptions, this research will focus on a thematic analysis of literature and expert interviews.

This study contributes to the current literature by helping to structure the managers key roles and responsibilities and what competencies they must possess in order to successfully navigate project management. As successful projects require the project manager to demonstrate managerial competencies to perform their roles and ensure project success (George, 2003; Hyväri, 2006), this study aims to structure and update the current literature by institutionalizing the correlation between these variables.

The study also contributes to the practical field by providing organizations that are interested in hiring/training future project managers with an understanding of the project managers competencies and how it can affect their designated managerial roles. Moreover, future managers can gauge an understanding of what skillsets they must develop to face organizational challenges and perform project roles sufficiently to achieve project success through this study as this study discusses the key competencies as well as taking a strength-based approach to developing these competencies.

The study will be structured as follows. Firstly, the introduction outlines the topic of the study and explains its relevance in the current management literature. The second part of the study explores the methodology of the study including the research design, data collection and data analysis of the study. Next, a systematic literature review will be conducted that distinguishes the core roles and responsibilities of the effective project manager, and the competencies that are required for the manager to effectively navigate their project management roles outlined. To accompany the systematic literature review, two expert interviews will be conducted, and excerpts from the interview in the form of quotes will be used where relevant to showcase expert opinions on the topic. Therefore, with the combination of these two methods, this qualitative study will follow a mixed methodology. In the fourth part of the study the findings of the study will be discussed alongside its relevance, implications, and limitations. In the end, a conclusion summarizing the study and its core themes and takeaways will be presented.

2. METHODOLOGY

2.1 Data Collection

The data collection of this research has been done through two separate methods. Firstly, a systematic literature review has been conducted to collect data from previous relevant research and provide an overview of core roles and responsibilities of the effective project manager as well as their relevant competencies in performing said roles. Secondly, two expert interviews have been conducted to provide practical insights on how the roles and responsibilities of the project manager translate into real world project management scenarios. These two methods combined can be used to answer the research question presented by analyzing both the theoretical concepts presented in the management literature as well as providing an understanding of how the insight from the research is applied to current project management practices.

The systematic literature review was chosen due to its tendency to consider previous relevant literature as data and use highly systematic approaches in order to review literature in a transparent and reproducible manner (Fisch & Block, 2018). Due to this tendency, it is essential that the steps undertaken in the data collection such as searching and selecting relevant literature is clearly documented. Firstly, to control the number of research

papers to be included in the systematic literature review, as well as assessing the relevance of papers in this research, the eligibility criteria is established. The eligibility criteria are composed of both an inclusion and exclusion criteria. In this research, only books and research papers related to business management and written in the English language were included. All other papers that were not relevant to the topic at hand or did not discuss project management in English were excluded. Relevant papers that were popular in terms of the number of times they were cited were prioritized, and papers that weren't cited even once was excluded.

Next, the databases that were chosen as the primary information sources to collect relevant research papers were identified. The database selection was done by prioritizing their popularity amongst researchers. In this research, the databases 1. Web of Science, 2. Google Scholar, and 3. Research Gate were chosen as the primary sources through which all the research papers were collected. Additionally, the research found within these databases often contained relevant information linked to additional papers in their references, so reference searching method was also used where deemed appropriate.

Keywords relevant to this research topic in the field of project management were identified and used as the primary search strategy. Some keywords were searched with slight alterations multiple times in order to increase the number of results, however only the most relevant and successful ones will be mentioned. Also, multiple filters were used in accordance with the eligibility criteria defined when searching for keywords. The following keywords were used to search for literature.

Figure 1 : Keywords List

	List of Keywords
1.	**Project Manager's Role**
2.	**Project Teams**
3.	**Project Manager's Responsibilities**
4.	**Manager Competencies**
5.	**Manager Skills**
6.	**Leadership**
7.	**Project Management**
8.	**Project Performance**
9.	**Resource Management**
10.	**Control Manager**
11.	**Project Success**
12.	**Managerial Psychology**
13.	**Communication**
14.	**Project Competencies**
15.	**Interpersonal Skills**

In the selection process, a total of 31 papers were found to be relevant to the topic of this research. Initially, the search concluded with a total of 195 papers from the search engine Web of Science from which 17 papers were selected. Additionally, the search engines Google Scholar and Research Gate provided 24 more papers, and reference searching added an additional 11

papers and books. This process brought the total number of papers to 52, which were then screened thoroughly for further relevance to this study by assessing the abstracts, introductions, and conclusions of the papers. 21 papers were then deemed to have low relevance in comparison, and lastly the final sample size of 31 papers was established.

There is an overwhelming amount of research in the project management sphere that uses the terms "roles", "responsibilities" and "competencies" interchangeably. Many of them although following similar themes, do not make clear distinctions between them and do not mention multidisciplinarity as a factor, thus expert interviews were also conducted to provide further insights to bridge this gap. The purpose of collecting data through the expert interview was to gain a better understanding of a manager's roles and responsibilities through the lens of their competencies and how they apply to multidisciplinary project teams. Doing so allowed this research to develop a clear framework that addresses the relationship between these variables as well as the gauging the experts' hands on experiences and opinions to contribute to the research. The approach of the interview was deemed semi-structured to have open dialogue to capture as much information as possible (Adams & Cox, 2008) as opposed asking strictly structured and close-ended questions. Not only does this approach the interviewee to freely share their knowledge, but also allows the interview to potentially express new relevant factors that may have been overlooked by the researcher (Adams & Cox, 2008). Experts are identified as individuals who are able to provide relevant information due to having developed "rich and coherent knowledge structures" (van de Wiel, 2017). Whether someone can be considered an expert largely depends on their hands on professional experience in their relevant fields and can be a crucial source of relevant information (van de Wiel, 2017). Consequently, the experts in question therefore must have professional experience in the field of project management to be considered relevant to this study, and only individuals who met these eligibility criteria have been selected for the interview. To prepare for the interview, the interviewees have been asked for verbal consent in addition to a signing written consent form, and a brief introduction of the research has been provided to communicate the motivations and aims of the research. It is understood that giving prior context about research allows the interviewees to have a clear understanding of the research topic and equips them to answer the interview questions more effectively (Adams & Cox, 2008).

2.2 Data Analysis

The data analysis method of thematic analysis was followed for this qualitative research. This was done in order to have a collective approach in identifying and analyzing the data collected in the management literature of this research as well as the expert interviews. Thematic analysis was chosen as the ideal analytic method for this research primarily for its ability to be "descriptive, explanatory and/or critical in nature" (Lochmiller, 2021). It is an analytical method to collect similar themes from a literature dataset and can also be used to infer meanings about an individuals experience and perspectives. As this qualitative study also includes expert interviews in combination with a literature review and attempts to find and translate similar themes within each, thematic analysis servers as the ideal approach. For the systematic literature review, a synthesis matrix was created to list all the chosen literature to be used in this study, and through the synthesis matrix the papers were revised, their core themes analyzed and described for each paper. This was done in order to find correlations between the common themes of each paper.

Next, for the analysis of the interviews, first the interviews were recorded and printed out as scripts. Then both the interview scripts alongside the answers were manually analyzed simultaneously to find common themes between them. As the literature review was already conducted prior to the interviews, it was possible to design the interview questions in a way that the answers would be fill in the gaps of knowledge within the SLR.

3. FINDINGS

For the findings, the following analysis structed was followed: firstly, the literature review allowed the identification of the most important competencies required by the manager as listed in the literature. Once identified, these competencies were then coded and represented as themes in this research paper. Then, the expert interviews conducted were combined with the collected literature and utilized to assist the development of these themes and provided further proof, insight, and justification to the inclusion of these themes. The interview questions were developed with the insights from the literature in mind. The interviewees were asked about their expert opinions independently and were also asked about the topics and themes identified in the literature.

Through the analysis methods used, this research reports key findings regarding the core responsibilities of a project manager, and their most important competencies to be successful as effective project managers in project teams. Through the SLR and expert interviews, it was found that the most frequently mentioned competencies required by the project manager to be successful were highly interpersonal. They are presented in the section below.

3.1 Multidisciplinarity

The main objective of this study is to understand the responsibilities a project manager has to perform using their necessary competencies in a multidisciplinary team setting as mentioned. And since to conduct this study project teams are studied, the impact of multidisciplinarity was studied as a variable as well. There is a huge knowledge gap in the literature when it comes to the distinction of responsibilities and competencies of the effective project manager specifically in multidisciplinary project teams. As stressed by the experts, most project teams consist of employees from several different disciplines who carry out different tasks. However, multidisciplinarity is rarely implicitly specified when it comes to the effectiveness of the project manager in managing project teams in both the literature and as conveyed by the experts. When asked to provide insights about this knowledge gap, both experts stated that regardless of the nature of the project team, they are still constructed for the same purpose of delivering project outcomes within the specified time, scope and budget and aim to provide high quality projects. As such, the effectiveness of the project manager must be measured through the same means and will provide similar results. This conclusion is inferred because the responsibilities and competencies of the manager considers the impact and capabilities of the manager themselves and how they interact with their project environment to produce desirable outcomes as opposed to the variety of disciplines involved in the team. Expert 1 states that:

"Nearly all projects I have worked on had people from different backgrounds and with different expertise. You need the variety of skillsets they bring to perform specific project tasks. However, it makes no difference in my experience as the core principles of project management remains the same regardless. You just need to follow the best practices according to the context of the project so that you get the results you want."

(Expert 1)

In accordance to the insights shared by the experts, it is implied that the variables measuring the success of a project manager and the competencies he displays remain a constant regardless of the multidisciplinarity within a project team, therefore we will assume in this study that the necessary traits a project manager must demonstrate for project success remains the same whether the project team consists of multidisciplinary team members or not.

3.2 Leadership & People Management

One of the most important responsibilities given to the project manager is that of the leader. Many research papers were found to emphasize the importance of the managers leadership capabilities as a driving factor in project effectiveness (e.g., Thamhain & Wilemon, 1977; George, 2003; Hyväri, 2006, Kerzner, 2022). As the leader, the manager is responsible for directing the project by creating shared visions, create project goals and missions for the project while also guiding the project team into following them. Not only should the manager direct the project, but they must also inspire and support the project team as a leader to be an effective project manager (Kent, 2005; Thamhain, 2004; Northouse, 2010). From the interview, one of the experts urged the importance of leadership at the beginning of the project and the role of the manager in setting goals and objectives. He stated that:

"I think it's very important as a manager to outline the goals and objectives at the beginning of the project and clearly define it amongst your team members to ensure that everyone is on the same page. If you don't know what you are aiming for, you cannot identify project success."

(Expert 1)

When asked about the managers supporting role, he stated that:

"In my experience, the project manager can get the best out of his team if he can support them into bringing out their best work, and this can only be done if he has leadership qualities to inspire his team and motivate them to go the extra mile by developing their productivity and creativity."

(Expert 1)

From the above statements as well as the supporting literature, it can be concluded that the project manager must be transparent in how they define and clarify goals and objectives and always be present to guide the project team as these are important functions of leadership by effective project managers. Moreover, in terms of inspiration, effective project managers are those who can motivate and influence the project team to bring out the best out of individual members by developing their creativity and lead by example (Kent, 2005, Northouse, 2010). Expert 2 provides another perspective to the supporting responsibilities of the manager as the leader of a project team. According to the expert, the project manager needs to anticipate potential project threats and uncertainties and be competent enough to guide his team

through it in order to transform threats into opportunities. He stresses that an effective project manager has critical competencies when making decisions under stressful and risky circumstances and can make the best out of bad situations by using his team to create appropriate solutions. He states that:

"If the project leader wants to complete projects successfully, he has to be proactive and anticipate potential issues that may arise such as conflict within the team, which is a very common problem in project teams. The best way to deal with conflict is for the manager to be close to his team members and care for their needs while anticipating their concerns. You have to make sure they listen to you, and they will only do that when they feel heard by you."

(Expert 2)

According to the experts, conflict management is a crucial skill that must be used in many project scenarios, as situations that may have potential conflicts in interest amongst team members are common in project teams. When further asked about conflict management, expert 1 also chimed in saying one of the most important functions of the leader is to build a team that can have mutual trust amongst themselves, are confident in their own abilities and are able to perform the tasks that are assigned to them independently. According to the expert, unity amongst the team members plays a critical role in the outcomes of the project and it is up to the project manager to facilitate team building. He asserts that project managers must consider their team members' needs and opinions and assign them with the appropriate tasks according to their strengths to create a unified team. The expert states that:

"90% of your success as a project manager comes from your ability to deal with people. You should know your team members' problems and requirements and should always be willing to listen to them. They can offer solutions to problems that you haven't thought about and if they notice that their inputs are being considered, they will more often than not put more effort into their work. Your emotional intelligence will be your best friend here."

(Expert 1)

From the statements, it is evident that the leader's role in facilitating team building and conflict resolution are indeed key requirements for project managers to be effective. From the literature, it is evident that effective project managers are those who have productive, satisfied, and high performing team members and are able to manage conflict, inspire their team members and display high levels of emotional intelligence (Luthans, 1988; Thamhain, 2004; Kent, 2005; Druskat and Druskat, 2006). However, it is interesting to note that the practical implications as described by the experts are often not as straight forward as discussed in the literature and require a nuanced approach as an effective project manager depending on the contexts of the project. The expert's reason that it is impossible to be ready to deal with every single team member of a project by strictly a by the book approach and that managers must show creativity and willingness to help the project team as they require.

3.3 Planning, Controlling & Organizing

According to both the experts, the planning, organizing, and controlling stage of the project is where they exercise most of their managerial capabilities. For the planning stage, the project managers are responsible for setting project planning and scheduling as well as budgeting and allocating project resources appropriately. The experts emphasized the project managers competency to design and execute plans and timetables for the project to finish it on time, within budget and with high quality. This claim is also supported by the article of Lientz and Rhea (2001), who noted the same attributes of a high-quality project as the one that adheres to its scope and budget. Moreover, the experts also emphasize the project managers competency to reliably devise useful financial strategies when budgeting and that they are able to optimize project resources and anticipate financial risks and uncertainties. Hence, it is implied that the effective project manager can sufficiently set project plans and is able to allocate resources adequately. For instance, when asked to elaborate, expert 2 stated that:

"A good project manager also needs to be a good planner so that he can manage the resources at his disposal properly. He should be able to create feasible plans, allocate resources for his budgeting responsibilities and distribute each members tasks correctly. If he can do all of this then his project will likely be performed without any problems, financial or otherwise."

(Expert 2)

Evidently, another important aspect of planning is the correct assigning of project tasks. Expert 1 states that at the beginning of the project, it is solely up to the project manager to recognize the strengths and weaknesses of his team members and accurately convey the responsibility of each member in order for the project to perform smoothly. He asserted that effective project managers assign the right amount of work to the right person in the right order to achieve high quality outcomes from the project. He stated that:

"The effective project manager must be able to define the tasks his team will be performing and hand them over to the right people. He should also be able to determine the sequence of tasks and the priority of each task, and whether some tasks need to be divided amongst multiple members and broken down into smaller ones."

(Expert 1)

Multiple papers support the claims made by the experts when it comes to the managers responsibility with the planning function. Inadequate planning can result in major project management problems and uncertainties such as lack of resources or running out of resources, setting unreasonable deadlines, defining unclear project goals and project tasks for team members which can also result in uncommitted team members (Posner 1987; Hyväri, 2006). In order to prevent such complications, project management practices such as accurate use of planning techniques, correct allocation of resources, identifying the right people for the right project tasks etc are emphasized by both the literature (Fabi & Pettersen, 1992; Posner 1987; Hyväri, 2006) and the experts.

The experts stress that the organization stage requires the project manager to be able to use appropriate project management tools and techniques while also recruiting and training team members for the project. The experts argue that the use of proper project management tools and techniques are crucial in determining how smoothly the project performs. Some examples of the tools commonly used by the experts are project reports, Gantt charts,

project dashboards etc. They stressed that it is very important for the project manager to be up to date with modern practices that can help ease the complexities of the project in order to better manage project scenarios and project stakeholders. Expert 2 further states that:

"As project managers, we always first select tools and techniques appropriate with the context of the project in order to avoid unnecessary complications later. Its also very important to use modern approaches and techniques such as using AI to help manage the project, and as the manager you need to know what kind of tools exist out there to help you set up your project."

(Expert 2)

Subsequently, recruitment and training of appropriate individuals for the project is another key part of the organization stage of the project according to the experts. In order for the project to function as intended and specific tasks to be performed, appropriate members must be recruited and/or trained to be able to meet that criterion. The experts stress that it's a necessary step so that all team members can proficiently contribute to the project as intended. Moreover, the experts stress that it's the responsibility of the project manager to arrange appropriate training and brainstorming interventions as it facilitates the development of the team members' competencies and create a participative and inclusive project environment. They also argue that the creation of incentives can be beneficial to motivate and encourage their team members in striving to increase their project performance. Expert 2 states that:

"In my opinion, a good project manager is able to gather talented people necessary for the project to succeed and help them become better than they already are by providing them with the necessary training and rewards them for their progress."

(Expert 2)

Interestingly, it was also found through many papers that the organizing management function can enhance the effectiveness of the project when applied appropriately (Kent, 2005; Northouse, 2010; Fabi & Pettersen, 1992). The literature also supports the claims of the experts by establishing that the creation of financial and/or non-financial incentives systems can encourage team members to enhance their performance and ultimately their effectiveness in the project environment (Thamhain, 2004; Pinto, 2007). Few papers also discuss the significance of the competent use appropriate tools and techniques by project managers in order to impact project management positively (Brill et al., 2006; Patanakul and Milosevic, 2008). However, it is important to note that generally the recruitment and training of project members as an organization function has not been specifically implied in the literature reviewed and it is clearly mentioned only by the experts.

Many papers discuss the importance for the controlling function as one of the management responsibilities of the project manager (eg. Lientz and Rea, 2001; Kerzner, 2022, Brill et al., 2006; Fabi & Pettersen, 1992).

According to the experts, the controlling function of project management can primarily be described as the responsibility of the project manager to monitor and troubleshoot project tasks, facilitate the project team to be self-managing when possible and most importantly meet project performance and project purpose. Expert 1 argued that the effective project manager is highly competent when it comes to recognizing and eliminating errors,

mistakes, and defects within a project task because of his ability to accurately and proactively monitor and troubleshoot the progress of their project deliverables. The expert emphasized the necessity of these competencies in the project manager so that they are able to detect and resolve potential threats within a project in a timely manner, ultimately contributing towards the success of the project. He states that:

"A good project manager is a master problem solver; he should be constantly monitoring the ins and outs of project tasks and proactively take initiative to solve any mistakes that might stand in the way of the project to be realized."

(Expert 1)

Alongside the expert, the importance of problem solving and troubleshooting abilities in order for a project manager to be considered effective is also discussed by multiple researchers (eg. Kent, 2005; Brill et al., 2006; Patanakul and Milosevic, 2008, Fabi & Pettersen, 1992). The authors outlined that managers need to attempt to develop themselves into effective project managers through the accurate use of controlling mechanisms and techniques to ensure project success. Additionally, meeting project performance and purpose is one of the most crucial factors in realizing the success of the project (Thamhain, 2004; Brill et al, 2006; Hernon, 2009). Both the literature and experts have indicated that the performance of the project is measured in terms of budget, scope, timeline and quality as its primary constraints. They have outlined that an effective project manager has the responsibility to fulfill these constraints adequately by attempting to reach project outcomes with a higher quality, quicker timing and with lower costs. However, the experts stress that project managers must not sacrifice the quality of the project in favor of realizing lower costs or decreasing the overall timeliness of the project. Expert 2 states that:

"The most important thing is to realize the purpose of the project as a good project manager without sacrificing its quality. With that in mind, we are constantly aiming to maximize the outcomes of the project when it comes to decreasing time and budget while keeping up to the standards for quality that we determined at the start of the project."

(Expert 2)

Although the aforementioned responsibilities of the manager regarding the control functions in a project management environment are discussed by both the literature reviewed and the experts, an exception has to be made when it comes to the facilitation of self-managing project teams. While there is a gap in literature that explicitly implies the necessity of a self-managing project team, the experts have shared insights from their practical experiences as project managers. Both the experts interviewed stressed the importance of giving their project members more authority and freedom in controlling their own work independently. They stressed that doing so allows the employees to be confident in their ability to succeed in tasks, work more enthusiastically and creatively and become more involved in the projects decision making processes. However, the experts also stated that while they should facilitate this freedom for the project team members, as an effective project manager they must also regularly keep tabs and verify the work the members are putting in to make sure the project is heading to the desired direction. When asked about the importance of self-managing project teams, expert 1 stated that:

"I think the world nowadays is heading more towards this style of giving more freedom to human resources to bring out the best in people as long as it's serving the project. Many

companies are adopting this style of project management, for example Japanese companies. They say that if the employees are working efficiently, we respect their different styles of work because what we are going to look at the end of the day is the output of the work. So, in my experience giving a certain amount of creative freedom and autonomy to employees is important for successful projects."

(Expert 1)

3.4 "3CS" of Communication, Collaboration & Commitment

Communication is regarded as one of the most important factors in a successful project team by most researchers (e.g. Crawford, 2005; Lientz & Rea, 2001; Kerzner 2022). So much so that its impact has been heavily emphasized by the Project Management Institute over the years (PMI, 2008; PMBOK, 2008). But the question arises as to why communication skills as a competency is required by project managers for effective project management, the answers to which are explored through the expert interviews and literature defined in the section below. According to the experts, effective communication skills is crucial for project team management as it connects the project manager to their team and allows them to respond to their anxieties, troubles and demands while also supporting their workflow. The experts stress that an effective project manager can use his communication skills to build strong relationships and foster mutual trust in the team, develop useful connections between the actors involved in the project, mitigate problems that arises in the project as well as manage the expectations of relevant stakeholders. When asked to clarify, expert 1 explained that:

"For sure communication is at the very top of the essential skills that you need to be a good project manager. As the head of the project, you are always communicating with different types of people with different personalities and its extremely important that you get your ideas across as well as listen to their ideas."

(Expert 1)

Expert 2 also adds to the argument that:

"Communication skills is not only about speaking, its also about being an affective listener so that you can share knowledge and information seamlessly. A good project manager is both an articulate speaker and an attentive listener."

(Expert 2)

When assessing the literature, Clarke (1999) states that effective communication skills of a project manager can drastically reduce non-productive actions taken by project team members, avoid errors in project tasks, build confidence and manage uncertainties in the project while also motivating and encouraging teamwork between members. Communication is also described as one of the core competencies of project managers that is tested the most considering the pivotal role of effective project managers (Shohet & Frydman, 2003).

Continuing, collaboration, also referred to as teamwork in management literature is ranked by multiple researchers as an important key to project success (e.g., Posner 1987; Hyväri, 2006; Thamhain, 2004) The authors describe that project success can be translated by the quality and effectiveness of interactions and cohesiveness between the actors in the project (Yang et al., 2011). The experts interviewed also outline the responsibility of the manager in facilitating collaboration and building teamwork and cooperation amongst the actors involved as it allows the team to function efficiently, it mitigates the chances of disagreements and miscommunication between team members and ultimately enhances the project environment, contributing to desired project outcomes. Expert 1 states that:

"Your project team can't function properly if it doesn't have effective teamwork. Your employees must always have good collaboration, cooperation, and communication amongst themselves to be a healthy project team that delivers results. And its your job as the project manager to make sure that environment is created for your employees."

(Expert 1)

Furthermore, commitment is also another important facet that heavily impacts project success as it determines the attachment and determination of the actors in the project and their respective efforts that contribute towards the desirable developments in project tasks (Clarke, 1999; Barkley, 2006; Luthans, 1988). Expert 1 makes a remark about how commitment contributes towards the project stating that:

"Ideally all the people involved in the project should show a degree of commitment and accountability for the project otherwise they will just be doing tasks that they don't believe in or identify with, this way it's impossible for the people involved to bring out their best work for the project. As the project manager, we first need to show commitment towards the project ourselves and foster the project environment in such a way that we inspire that commitment in them too."

(Expert 1)

It is important to note that communication, collaboration, and commitment are all related to one another and are each positively contributing towards the project. It can be inferred from the literature and the insights of the experts that an effective project manager should possess the competencies to facilitate, promote and instill all three of these variables to the relevant project stakeholders and practice them in the project themselves in order to achieve project success.

3.5 Summary of Findings

The findings summarize the most important responsibilities of the effective project manager and the respective competencies that are noted as necessary to be a successful project manager. Through the mixed analysis approach of both a systematic literature review of relevant literature as well as insights from two expert interviews, it is summarized that the sufficient leadership and people management skills of the project manager will allow him to perform his responsibilities as the head of the project and steer it towards desirable outcomes. Secondly, the project manager is at the height of his responsibilities during the planning, controlling and organization stages of the project and requires the relevant competencies to successfully navigate those stages and steer it towards project success. Moreover, encapsulating a successful project environment are factors that involve communication, collaboration, and commitment by and for the relevant stakeholders in the project, and the effective project manager is responsible for adequately exercising and translating these concepts into project success. Finally, multidisciplinarity in project teams is addressed by the experts and correlations are drawn between the effectiveness of the project manager and how their responsibilities and competencies

translate into multidisciplinary project teams when compared to the analysis of project teams in general.

4. DISCUSSION

The findings of the systematic literature review as well as the expert interviews show that project manager can heavily influence the outcome of the project based on their project management practices (e.g., George, 2003; Hyväri, 2006). It is worth noting that the responsibilities of the project manager generally fall within the roles described by Kerzner (2022), and Lientz & Rea (2001). However, the analysis of the literature with the practical insights from the experts suggests that in order for the project manager to be considered effective, he must have demonstrated desirable competencies and strengths that allow him to perform his most important responsibilities in specific project scenarios that lets him drive the project towards successful outcomes. Based on these results, two key conclusions can be drawn.

4.1 Team Managers' Competencies: A Strength Based Approach

The research found that managers are required to exercise appropriate competencies when performing their roles in order for the project to be successful, the project team members to perform to the best of their abilities, project scenarios and challenges to be navigated successfully and subsequently to establish the project manager and his practices as effective. Alongside the expert interviews, several studies have focused on the types of competencies a manager must demonstrate to perform his most important roles (e.g., Posner 1987; Fabi & Pettersen, 1992; Brill et al., 2006; Patanakul and Milosevic, 2008; Hyväri, 2006, etc). However, these research, although alluding and referring to the managers competencies as his strengths in performing certain tasks, do not implicitly state a strength-based approach when analyzing the effectiveness and performance of the manager or his project team members. To clarify, strength-based approach focuses on evaluating an individual's strengths and competencies rather than their weakness and finding ways to translate these strengths into the workplace to achieve desired outcomes (Van Yperen, 2015; Van Woerkom, 2016). It is evident from this research that many of the challenges that the project manager faces require him to work his strengths in order to either enhance his own performance or the performance of the team members associated with the project so that the project reaches desired outcomes. Based on this, it can be inferred that a strength-based approach can be beneficial for the manager exercising his competencies in project scenarios with a focus on the more reoccurring usage of interpersonal skills as stated by the experts. Moreover, this approach can be utilized in identifying and making use of the strengths of project team members to enhance their performance and mitigate the usual pitfalls they encounter in a project. However, since this is a concept that is fairly new to this specific research topic, more research is required in order to form more concrete analysis of this concept.

4.2 Managing Multidisciplinary Teams

The research conducted by this paper shows that the impact the project managers have on fulling his responsibilities as a project team manager is not dependent on the multidisciplinary nature of the project team itself but is dependent on core key competencies that the manager must demonstrate to effectively manage the team and drive the project towards project success (eg. Lientz and Rea, 2001; Kerzner, 2022; Smith,1999; Crawford, 2005). Moreover, it was surmised that identifying the core competencies of a project manager that is required to successfully navigate project scenarios in regular project teams will allow to carry this knowledge over for the management of multidisciplinary project teams. As there is no virtual difference between the effectiveness of these competencies the manager displays between regular and multidisciplinary project teams, it can be concluded that the most valuable competencies as highlighted by both the literature reviewed and expert interviews empowers the manager to be effective in both regular and multidisciplinary project teams.

4.3 Theoretical and practical implications

This research provides insights regarding the most important responsibilities of the effective project manager and outlines the key competencies that the project manager requires in order to be effective at project management practices. It contributes to the theory and addresses the knowledge gap when it comes to addressing multidisciplinary project teams by studying regular project teams and identifying that the effectiveness of the core competencies of the project manager is unchanged for multidisciplinary teams as with regular teams. Furthermore, this research updates and adds to the current management theory on the relationship between an effective managers responsibility and their competencies when it comes to project management practices regarding multidisciplinary project teams.

Additionally for the practical implications, by examining important topics in both theory and practice, both organizations and future project managers can gain insights into project management and how an individual's strengths can enable them to perform their respective responsibilities sufficiently and succeed as project managers.

4.4 Limitations and Future Research

The limitations encountered in this research is primarily concerning the quality of the data collected. Firstly, the keywords used in the literature search could be expanded and more variations in phrases could be included to target more studies that focused on multidisciplinary project teams. Additionally, the quality and composition of the interviewees in accordance with their experiences can be considered a limitation as experts with more years of experience as project managers could provide more concise insights to the topic. Moreover, the experts interviewed were from the same company, therefore it can be considered a limitation as there were experts available from different companies with different management experiences, then it would be possible to gain more dynamic responses to the interview questions. Having a composition of managers with a varying degree of experience levels as well as experience in managing different types of project teams (i.e construction, healthcare, transport etc) will be beneficial for gaining more information.

For future research, multidisciplinary project teams should be directly studied and the strength-based approach to project managers competencies can be monitored in order to further understand how a project managers competency can empower

him to perform his responsibilities towards project and organizational goals and objectives.

5. CONCLUSION

This research focuses on the understanding of the responsibilities of the effective project manager and the important competencies that he must display in order to strive for project success. Through the use of a mixed analysis with a systematic literature review as well as practical insights gained from expert interviews, the most important responsibilities of the project manager were discovered, and their required competencies were analyzed. It was found that competencies that heavily influenced the success of the effective project manager in performing their roles and ultimately contributing to project success remain the same in effectiveness whether the composition of the project team was multidisciplinary or not and thus it can be concluded that understanding the effective project manager will allow organizations to understand what is required to manage a multidisciplinary project team.

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7. APPENDIX

TABLE 2: INTERVIEW QUESTIONS

1	How do you ensure good teamwork within the team?
2	How important do you think communication is in the role of a project manager?
3	What skills and perks are considered traits of a good project manager?
4	What are the key competencies and strengths required in a manager according to your experience to succeed as project managers of the future?
5	How involved does a project manager have to be in a project team? Do you just provide the instructions and then review the final product? What depth of supervision works best?
6	What kind of issues most commonly arise during a project that lead to unexpected delays or any other form of disruption and how do you tackle it as the manager?
7	How do you address the issue of conflicts between team members?
8	Does a deeper connection with the team help the success of a project?
9	How can a project manager help in keeping a team motivated?
10	As a project manager, you have the final deliverable goals of each project. How much of this information is shared with your team?
11	Do you think that team members who underperform reflect on the ability of the project manager?
12	In attempt to meet deadlines, do you think it is alright to sacrifice quality of an ongoing project?
13	Do you think it necessary to have strict instructions for your team? Does offering team members more flexibility and freedom change anything?
14	Is it more challenging to lead a multidisciplinary team? What are the differences between multidisciplinary and regular project teams?
15	What tools do you use help you in your role as a leader?
16	How easily can you predict the success of a project?

17	Can you explain the significance of planning at the start of a project?
18	What do you do to ensure everyone involved are on the same page?
19	What is expected from a project manager by stakeholders?
20	Do you see communication between members and commitment to the project as a necessary action from every team member?

*Note: The interview followed a conversation style dialogue with the interviewees, therefore more follow up questions were asked in response to answers for clarification, however, are not recorded here.